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AF
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor's Application of

Applicants: SHANKS, Steven C. and TUCEK, Kevin B.

Title of Invention: Multi-Probe Device

Filed: July 1, 2003

Serial Number: 10/612,504

Atty Docket No.: 206-038

Examiner: Henry M. Johnson, III

Art Unit: 3739

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Sandra L. Etherton

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REPLY BRIEF

Mail Stop Appeal Brief
Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

An Examiner's Answer was mailed on November 1, 2007 which requires a reply brief to be filed within two months. Because two months falls on January 1, 2008, a federal holiday, the deadline for submitting a reply brief is extended to January 2, 2008 according to 35 C.F.R. §1.7. This Appeal Brief is submitted on or before January 2, 2008 and is therefore considered timely filed. No fee is believed due.

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References Cited Appendix
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Cases Cited



Continental Can Co. USA Inc. v. Monsanto Co., 948 F.2d 1264, 20 USPQ2d 1746 (Fed. Cir. 1991)

In re Gurley, 27 F.3d 551, 31 USPQ2d 1130 (Fed. Cir. 1994)

In re Icon Health and Fitness, Inc., 496 F.3d 1374, 83 USPQ2d 1746 (Fed. Cir. 2007)

In re Oelrich, 666 F.2d 578, 212 USPQ 323 (CCPA 1981)

In re Schreiber, 128 F.3d 1473, 44 USPQ2d 1429 (Fed. Cir. 1997)

In re Swinehart, 439 F.2d 210, 169 USPQ 226 (CCPA 1971)

KSR Int'l Co. v. Teleflex Inc., 550 U.S. ___, 127 S.Ct. 1727, 82 USPQ2d 1385 (2007)

McGinley v. Franklin Sports, Inc., 262 F.3d 1339, 60 USPQ2d 1001 (Fed. Cir. 2001)

MEHL/Biophile Int'l Corp. v. Milgraum, 192 F.3d 1362, 52 USPQ2d 1303 (Fed. Cir. 1999)

Schering Corp. v. Geneva Pharms., Inc., 339 F.3d 1373, 67 USPQ2d 1664 (Fed. Cir. 2003)

United States v. Adams, 383 U.S. 39, 148 USPQ 479 (1966)

Verdegaal Bros, Inc. v. Union Oil Co. of California, 814 F.2d 628, 2 USPQ2d 1051 (Fed. Cir. 1987), *cert. denied*, 484 U.S. 827 (1987)

List of References

- R-1** U.S. Patent 6,074,411 issued to Lai (referred to herein as “Lai”)
- R-2** Office action dated November 10, 2005
- R-3** Appeal Brief dated August 2, 2006
- R-4** Appeal Brief dated March 5, 2007
- R-5** Revised Supplemental Appeal Brief dated September 27, 2007 (identical to and correcting signature of June 29, 2007 Revised Supplemental Appeal Brief)
- R-6** Examiner’s Answer dated November 1, 2007
- R-7** U.S. Patent 6,267,779 issued to Gerdes (referred to herein as “Gerdes”)
- R-8** U.S. patent 5,653,706 issued to Zavislan (referred to herein as “Zavislan”)
- R-9** Office action dated September 28, 2006
- R-10** Notification of Non-Compliant Appeal Brief dated June 5, 2007
- R-11** Petition to Dispute the Notification of Non-Compliant Appeal Brief dated June 29, 2007
- R-12** Decision on Petition dated September 14, 2007
- R-13** Communication for the Examiner dated September 24, 2007
- R-14** Applicants’ Specification of U.S. Patent App. No. 10/612,504, as amended, and Drawings

Copies of the references above are included in the References Cited Appendix

Manual of Patent Examining Procedure, Eighth Edition, August 2001, Rev. 4 October 2005

MPEP §707.07

MPEP §2114

MPEP §2142

I. Grounds of Rejection to be Reviewed upon Appeal

Applicants dispute the Examiner's position that his anticipation rejection of claims 30 and 32 in light of U.S. Patent 6,074,411 issued to Lai et al. (hereinafter "Lai") are not appropriate for appeal.¹

In a final office action dated November 10, 2005, the Examiner rejected Applicants' claims 30 and 32 as being anticipated by Lai.² Applicants responded to the final office action with arguments and proposed amendments on March 8, 2006. The Examiner issued an advisory action on March 29, 2006, rejecting Applicants' proposed amendments without addressing Applicants' arguments. Applicants filed a Notice of Appeal and several appeal briefs, all of which included arguments addressing this rejection.³ On September 28, 2006, the Examiner reopened prosecution and issued a new office action citing a new ground for rejection.⁴ The Examiner now argues in his Examiner's Answer that the anticipation rejection of claims 30 and 32 is not proper grounds for appeal because "[i]n the office action of September 28, 2006 only claims 1, 2, 8-10, 13-15 and 22 were rejected under 35 U.S.C. 102(b) as anticipated by Lai."⁵

The Examiner's rejection of claims 30 and 32 as being anticipated by Lai is still pending. According to the MPEP, "[i]f applicant's arguments are persuasive and upon reconsideration of the rejection, the examiner determines that the previous rejection should be withdrawn, the examiner *must* provide in the next Office communication the reasons why the previous rejection is withdrawn by referring specifically to the page(s)

¹ Lai is attached hereto as Reference R-1.

² November 10, 2005, Final Office Action, pp. 3-4, attached hereto as Reference R-2.

³ See August 2, 2006 Appeal Brief, pp. 19-22, attached hereto without appendices as Reference R-3; March 5, 2007 Appeal Brief, p. 15, attached hereto without appendices as Reference R-4; and September 27, 2007 Revised Supplemental Appeal Brief, p. 15, attached hereto without appendices as Reference R-5.

⁴ See September 28, 2006 Office Action, attached hereto as Reference R-9.

⁵ November 1, 2007 Examiner's Answer, attached hereto as Reference R-6.

and line(s) of applicant's remarks which form the basis for withdrawing the rejection." MPEP §707.07 (emphasis added). The Examiner never withdrew his anticipation rejection with respect to claims 30 and 32 nor suggested Applicants' arguments with respect to claims 30 and 32 were persuasive.

Accordingly, whether the Examiner rightfully determined that Lai anticipates Applicants' claims 30 and 32 remains a matter for review by the Board of Patent Appeals and Interferences. Applicants have included their arguments regarding this rejection in the Reply Arguments section below.

II. Reply Arguments

A. Lai Does Not Anticipate Applicants' Claims Under 35 USC 102(b).

The Examiner argues that Applicant's claims 1, 2, 8-10, 13-15, and 22 are anticipated by Lai. Additionally, the Examiner never withdrew his rejection of claims 30 and 32 as being anticipated by Lai, as detailed above. In particular, the Examiner argues that:

- (1) Lai anticipates Applicants' claimed invention because Lai discloses the structural elements recited in Applicants' claims; and
- (2) Lai anticipates Applicants' claimed invention because Lai inherently discloses beam shaping optics and spot shapes.

Applicants continue to respectfully disagree with the Examiner's arguments.

Principles of Law Relating to Anticipation & Inherency

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference."

Verdegaal Bros., Inc. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987), *cert. denied*, 484 U.S. 827 (1987).

When determining the elements or limitations of a claim, it is well-established law that a patent applicant can recite features of his invention either structurally or functionally. *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997); MPEP §2114. When an element is defined functionally, however, it may be anticipated by a prior art structure if the prior art structure inherently discloses the functionally claimed element. *In re Schreiber* at 1478, 44 USPQ2d at 1432 (citing *In re Swinehart*, 439 F.2d 210, 213, 169 USPQ 226, 228 (CCPA 1971)).

The Federal Circuit has explained that, to establish that a characteristic is inherently disclosed by a prior art reference, the inherent characteristic must be a “necessary and inevitable” consequence of the disclosure in a prior art reference. *Schering Corp. v. Geneva Pharms., Inc.*, 339 F.3d 1373, 1378-80, 67 USPQ2d 1664 (Fed. Cir. 2003); *Continental Can Co. USA Inc. v. Monsanto Co.*, 948 F.2d 1264, 1268, 20 USPQ2d 1746, 1749 (Fed. Cir. 1991). It is not sufficient to show that the prior art would probably, or possibly, produce the undisclosed element. *Continental Can* at 1269, 20 USPQ2d at 1749; see also *MEHL/Biophile Int’l Corp. v. Milgraum*, 192 F.3d 1362, 1365, 52 USPQ2d 1303, 1305 (Fed. Cir. 1999) (“Occasional results are not inherent.”).

An instructive example of an inherent anticipation analysis by the Federal Circuit can be found in *MEHL/Biophile*. 192 F.3d at 1362. In *MEHL/Biophile*, a disputed patent claim required that a laser light applicator be aligned substantially vertically over a hair follicle opening. *MEHL/Biophile* at 1364. One of the prior art references was an instruction manual that described the use of a laser to remove tattoos but was silent as to applying the laser to hair follicles and as to vertical alignment therewith. *Id.* at 1364. The Federal Circuit found that the manual did not inherently disclose vertical alignment

of the laser light applicator because the operator of the prior art laser could “use the laser according to the manual without necessarily aligning the laser ‘substantially vertically over a hair follicle opening.’” *Id.* at 1365. The Federal Circuit explained that “[t]he possibility of such an alignment does not legally suffice to show anticipation.” *Id.* (citing *In re Oelrich*, 666 F.2d 578, 581 212 USPQ 323, 326 (CCPA 1981) (emphasis added).

1. Lai does not expressly or inherently disclose freely moving probes while emitting laser beams.

Applicants disagree with the Examiner that, because Lai discloses the structural components of Applicants claims, Lai anticipates Applicants’ claims. Consistent with the teachings of *In re Schreiber* presented above, Applicants describe an element of their claimed invention in functional terms: each of two or more handheld probes “emits one or more laser beams . . . while being freely moved by a user’s hand relative to the surface of the skin of a patient.”⁶ The appropriate question then becomes whether the prior art inherently discloses freely moving multiple laser probes while they emit laser beams.

Lai does not inherently disclose freely moving laser probes while they emit laser beams. Lai does not even teach a device capable of being freely moved by hand while emitting laser beams. Rather, Lai emphasizes that its laser modules must be pointed directly at an acupuncture point and that self-adhesive holders are configured to securely hold the laser module at the acupuncture point. *See* Lai, col. 2, lines 21-28. The Examiner asserts that Figure 2 of Lai discloses an embodiment of Lai’s laser module that operates without the adhesives. Figure 2, however, simply illustrates the laser module onto which the adhesive holder is applied. *See* Lai, col. 2, lines 21-31 and 57-59. There

⁶ *See* Applicants’ claim 1.

is nothing in Lai's disclosure that indicates Lai's laser modules are capable of emitting laser beams while they are freely moved.

Even assuming, *arguendo*, that the laser modules of Lai are considered capable of freely moving during operation, it does not follow that Lai's laser modules *necessarily* emit one or more laser beams while being freely moved by a user's hand. Moreover, freely moving laser probes while they are emitting light is in no way the inevitable result of practicing Lai's invention. The laser modules taught by Lai operate on a timer-controlled switch, which can easily control the laser module so that it only emits laser beams after being placed and secured on the patient's acupuncture sites. *See* Lai, co. 3, lines 11-14. As with the prior art instruction manual in *MEHL/Biophile*, Lai is silent on whether its laser modules are freely movable while emitting laser light. Accordingly, the mere *possibility* that the laser modules disclosed in Lai could be moved while emitting laser light is insufficient to establish inherent anticipation.

Because Lai fails to expressly or inherently disclose handheld probes that are freely moveable during laser operation, Lai cannot anticipate Applicants' claims 1, 2, 8-10, 13-15, 22, 30 and 32.

2. Lai does not expressly or inherently disclose a beam-shaping apparatus or a spot shape.

Applicants respectfully disagree with the Examiner's arguments that Lai teaches the use of optics and that beams inherently must have some shape.

As detailed in Applicants' earlier briefs,⁷ Lai discloses only focusing optics. Contrary to the Examiner's assertions, focusing optics do not necessarily or inevitably

⁷ *See* August 2, 2006 Appeal Brief pp. 17-22, March 5, 2007 Appeal Brief, p. 15, and September 27, 2007 Revised Supplemental Appeal Brief, p. 15.

create beam shapes. Focus refers to how clear or fuzzy the image is, whereas shape refers to the perimeter geometry of the image as it impinges the patent's skin. A device can emit a laser beam that is in or out of focus, and focusing the beam will not change the resultant shape. Focusing optics do not necessarily provide an apparatus for obtaining a desired perimeter or spot shape. Accordingly, beam-shaping optics are not inherent in focusing optics.

Because Lai fails to expressly or inherently disclose an optical arrangement for transforming a laser beam into a desired beam shape, Applicants' claims 1, 2, 8-10, 13-15, 22, 30 and 32 are not anticipated by Lai.

3. Conclusion

Applicants have shown that Claims 1, 2, 8-10, 13-15, 22, 30 and 32 are not anticipated under 35 USC 102(b) by Lai, and reversal of the rejection is respectfully requested.

B. Applicant's Claims Are Not Obvious Under 35 USC 103(a) in Light of U.S. Patent 6,267,779 Issued to Gerdes in View of U.S. Patent 5,653,706 Issued to Zavislan et al.

The Examiner argues that Applicant's claims 1-10, 13-30 and 32 are unpatentable over U.S. Patent 6,267,779 issued to Gerdes (hereinafter "Gerdes") in view of U.S. Patent 5,653,706 issued to Zavislan et al. (hereinafter "Zavislan").⁸ The Examiner makes a number of arguments: that Zavislan is analogous art; that Gerdes and Zavislan do not teach away from Applicants' invention; that Gerdes and Zavislan inherently disclose elements of applicants' claims; and that Gerdes expressly teaches ultraviolet radiation

⁸ Gerdes and Zavislan are attached hereto as References R-7 and R-8 respectively.

and a variety of spot shapes. Applicants respectfully continue to disagree with the Examiner's arguments.

Principles of Law Relating to Obviousness & Inherency

A claim is *prima facie* obvious only if an analogous prior art reference (or references when combined) teaches or suggests all the claim limitations. MPEP §2142. According to the Supreme Court, in the recent case *KSR Int'l Co. v. Teleflex Inc.*, when combining references there must be "a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does." 550 U.S. ___, 14, 127 S.Ct. 1727, 1741, 82 USPQ2d 1385 (2007). Moreover, the Supreme Court instructs that "when the prior art teaches away from combining certain known elements, discovery of a successful means of combining them is more likely to be nonobvious." *Id.* at 12, 127 S.Ct. at 1739 (citing *United States v. Adams*, 383 U.S. 39, 51-52, 148 USPQ 479 (1966)).

In applying the *KSR* decision to a recent case, the Federal Circuit instructed that a prior art reference may be said to teach away from a combination or invention when a person of ordinary skill, upon reading of the reference, would be discouraged from following the path set out in the reference or would be led in a different direction from the path that was taken by the applicant. *In re Icon Health and Fitness, Inc.*, 496 F.3d 1374, 1381, 83 USPQ2d 1746 (Fed. Cir. 2007) (quoting *In re Gurley*, 27 F.3d 551, 553, 31 USPQ2d 1130 (Fed. Cir. 1994) and citing *KSR* at 12, 127 S.Ct. at 1739-40). "Additionally, a reference may teach away from a use when that use would render the result inoperable." *Id.* (citing *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1354, 60 USPQ2d 1001 (Fed. Cir. 2001)).

Where a reference is alleged to inherently teach an element, the Federal Circuit has explained that the inherent characteristic must be a “necessary and inevitable” consequence of the disclosure in a prior art reference. *Schering* at 1378-80; *Continental Can* at 1268, 20 USPQ2d at 1749. It is not sufficient to show that the prior art would probably, or possibly, produce the undisclosed element. *Continental Can* at 1269, 20 USPQ2d at 1749; see also *MEHL/Biophile* at 1365, 52 USPQ2d at 1305 (“Occasional results are not inherent.”).

1. Zavislan is not analogous art.

Applicants respectfully disagree with the Examiner that Zavislan is analogous art. While Zavislan teaches a single handheld laser device, it teaches one in an entirely different field that solves an unrelated problem, as detailed in Applicants’ prior briefs.⁹ Zavislan’s disclosure and Applicants’ invention are in different fields of endeavor and, although both involve laser radiation, therapeutic lasers and surgical lasers cause dramatically different results on a patient’s body and must therefore be designed considering different parameters and safety concerns. Accordingly, Zavislan is non-analogous art, and Applicants’ claims 1-10, 13-30, and 32 are not obvious over Gerdes in view of Zavislan.

2. Zavislan teaches away from multiple wands.

Applicants respectfully disagree with the Examiner that, despite teaching away, Zavislan can be combined with Gerdes because Zavislan is merely cited for the teaching

⁹ See March 5, 2007 Appeal Brief, pp. 16-18, 25-27, and 31-33, and September 27, 2007 Revised Supplemental Appeal Brief, pp. 16-18, 25-26, and 30-32.

of mounting a laser within a probe. As detailed in Applicants' prior briefs,¹⁰ Zavislan teaches away from using multiple wands because it discloses a high power laser for ablative dermatology treatments, and multiple ablative wands cannot safely be used by hand: a practitioner can't see two places simultaneously to cut two places simultaneously. Because Zavislan teaches technology requiring different design parameters and considerations than those facing low-power therapeutic laser device developers, a person skilled in the art of therapeutic laser devices would be discouraged by the path set out in Zavislan. Accordingly, Applicants' claims 1-10, 13-30, and 32 are not obvious over Gerdes in view of Zavislan.

3. Zavislan and Gerdes teach away from freely moving the probes.

Applicants respectfully disagree with the Examiner that the laser probes disclosed in Zavislan and Gerdes are capable of freely moving while emitting laser beams. Applicants further assert that Zavislan and Gerdes teach away from freely moving probes that emit laser beams.

First, neither Zavislan nor Gerdes inherently disclose that multiple handheld wands are capable of being freely movable while emitting laser beams. Zavislan's teachings do not necessarily or inevitably require free movement of its laser while it is operating. Rather, according to Zavislan, the laser is operated after the laser module is positioned over the treatment area. *See* Zavislan, col. 4, lines 55-60. Similarly, the laser probes in Gerdes also do not necessarily or inevitably permit free movement during radiation. Gerdes describes sophisticated software for controlling the operation of the

¹⁰ *See* March 5, 2007 Appeal Brief, pp. 18-20, 27-28, and 33-34, and September 27, 2007 Revised Supplemental Appeal Brief, pp. 18-19, 27-28, and 32-33.

therapeutic lasers so that they are only energized once the laser wands are placed in the proper position. *See* Gerdes, col. 12, lines 2-52. Moreover, Gerdes discloses an automatic positioning device that holds the laser wands so that their beams properly intersect. *See* Gerdes, col. 13, lines 22-35. Zavislan and Gerdes both expressly disclose how to operate their laser probes *without* achieving free movement during laser operation.

Second, combining the teachings of Zavislan and Gerdes to achieve Applicants' invention is not obvious or even sensible. Taking a high-power ablative laser as disclosed by Zavislan and combining it with multiple lasers intended to intersect as disclosed by Gerdes and then further adapting them to freely move while they are emitting laser beams would be impractical, contrary to the express purposes of Gerdes and Zavislan, and highly dangerous. The fact that neither Gerdes nor Zavislan includes the interlocks described by the Examiner only further supports Applicants' position that the laser probes in Gerdes and Zavislan were never intended or even contemplated to be freely moved while emitting laser light.

Because both Gerdes and Zavislan do not inherently disclose, and rather teach away from, freely moving hand-held probes while they emit laser beams, Applicants' claims 1-10, 13-30, and 32 are not obvious over Gerdes in view of Zavislan.

4. Zavislan and Gerdes teach away from emitting two laser beams simultaneously and impinging two different parts of a patient's body.

Applicants respectfully disagree with the Examiner that Gerdes discloses laser probes capable of simultaneously impinging two different places on a patient. Gerdes

does not inherently disclose simultaneously laser treating two different places, and both Gerdes and Zavislan teach away from it.

First, Gerdes does not inherently disclose that its laser beams are capable of impinging two different parts of a patient's body. Rather, simultaneously treating multiple areas of a patient is expressly discouraged rather than being a necessary or inevitable result of practicing Gerdes' teachings. Gerdes teaches a device wherein the wands are positioned over the patient in such a manner that the radiation from the wands intersect in one area for the desired treatment of the patient. Moreover, Gerdes teaches significant safety measures to ensure its lasers are correctly intersecting prior to radiation and even discloses an apparatus for securing the laser modules in such a position. *See* Gerdes, col. 12, lines 2-52, and col. 13, lines 22-35.

Second, as explained above, Zavislan teaches an ablative laser device wherein the wand is visually positioned over a treatment area where microsurgery is desired, and it would be impractical, possibly even dangerous, to simultaneously treat multiple areas on the patient. A person of ordinary skill in the art would not consider Zavislan's teachings as appropriate for modifying Gerdes to achieve Applicants' claimed invention. Accordingly, Applicants' Claim 2 is not obvious over Gerdes in view of Zavislan.

5. Gerdes does not teach using ultraviolet laser light.

Applicants respectfully disagree with the Examiner that Gerdes teaches the use of ultraviolet light. As detailed in Applicants' prior briefs,¹¹ ultraviolet light ranges from about 4 nm to less than 400 nm, just beyond violet in the visible spectrum of light. Gerdes only discloses aiming *visible* radiation having a wavelength of between

¹¹ *See* March 5, 2007 Appeal Brief, pp. 22-24 and 29-30, and September 27, 2007 Revised Supplemental Appeal Brief, pp. 22-23 and 29-30.

approximately 400 nm and 700 nm. It is well known that ultraviolet light is not visible light. See, e.g., RANDOM HOUSE UNABRIDGED DICTIONARY 2051 (2d ed. 1993) (defining ultraviolet as “beyond the violet in the spectrum, corresponding to light having wavelengths shorter than 4000 angstrom units). Furthermore, Gerdes only discloses visible light. Therefore, Gerdes does not teach or suggest an ultraviolet wavelength, and Applicants’ claims 16 and 29 are not obvious over Gerdes in view of Zavislan.

6. Gerdes does not teach various spot shapes.

Applicants respectfully continue to disagree with the Examiner that Gerdes teaches a variety of spot shapes. As detailed in Applicants’ prior briefs,¹² Gerdes only discloses that “a wide variety of feathered, diffused, Fresnel, traced, and other types of spread-out patterns are also suitable for use with the present invention.” A linear spot shape and plus-sign spot shape, however, are not “spread out.” Therefore, Gerdes does not disclose or suggest a line or plus-sign spot shape, and Applicants’ claims 17, 19, and 21 are not obvious over Gerdes in view of Zavislan.

7. Conclusion

Applicants have shown that Claims 1-10, 13-30, and 32 are not obvious under 35 USC 103(a) in light of Gerdes and Zavislan for one or more reasons explained above. Reversal of the rejections is respectfully requested.

¹² See March 5, 2007 Appeal Brief, pp. 24-25, and September 27, 2007 Revised Supplemental Appeal Brief, pp. 23-24.

III. Issues Not Addressed by Examiner in Examiner's Answer

The Examiner responded to the wrong appeal brief and therefore failed to consider and respond to Applicants' arguments regarding the Examiner's obviousness rejection of claims 23-29 over Lai in view of Gerdes.

A. Claims 23-29 Remain Rejected under 35 U.S.C. 103(a) as Obvious Over Lai in View of Gerdes And Therefore Are Appropriate for Appellate Review.

Due to a series of disputes, Applicants have filed four appeal briefs in this appeal: the August Brief, March Brief, June Brief, and September Brief. Only the March Brief addresses all of the pending appealable rejections. Unfortunately, the Examiner has directed his Answer to the wrong brief. Consequently, the Examiner has failed to consider and respond to Applicants' arguments regarding the Examiner's still-pending obviousness rejection of claims 23-29 over Lai in view of Gerdes.¹³

1. The Examiner's Answer erroneously addresses the September Brief, which is moot; the March Brief is pending.

In a final office action dated November 10, 2005, among other rejections, the Examiner rejected Applicants' claims 3-7, 16-22, and 23-29 as being obvious over Lai in view of Gerdes.¹⁴ Applicants responded to the final office action with arguments and proposed amendments, and then the Examiner issued an advisory action rejecting Applicants' proposed amendments without addressing Applicants' arguments.

Applicants next filed a Notice of Appeal and an Appeal Brief (hereinafter "August Brief") that included arguments directed toward the Examiner's obviousness

¹³ On November 30, 2007 Applicants filed a Petition to the Director formally requesting that the Examiner redirect his Examiner's Answer to the March Brief. As of the filing date of this reply brief, no decision on the petition has been issued.

¹⁴ November 10, 2005, Final Office Action, pp. 4-5.

rejections citing Lai and Gerdes from his November 10, 2005 Final Office Action.¹⁵ On September 28, 2006, the Examiner reopened prosecution and issued a new office action citing a new ground for rejection.¹⁶ With respect to Applicants' arguments addressing the Examiners' earlier obviousness rejection over Lai in view of Gerdes, the Examiner stated:

Applicant's Appeal Brief filed August 2, 2006 is acknowledged. Prosecution on the merits of this application is reopened and the finality of the office action of November 10, 2005 is withdrawn. *Lai et al. teach a specific embodiment without an adhesive ring (Fig. 2) that is clearly capable of being freely moved by a hand while radiating. Lai et al. therefore does not teach away from moving the wand by hand. A new office action is provided herein.*¹⁷

In response to the Examiner's new office action, Applicants filed a Petition to Revive the Appeal and a new Supplemental Appeal Brief (hereinafter "March Brief"), which incorporates by reference the earlier August Brief. The March Brief addresses the new rejection made by the Examiner as well as the Examiner's earlier obviousness rejections citing Lai and Gerdes, specifically including claims 23-29.¹⁸ The March Brief addresses all of the pending appealable rejections.

The Examiner rejected the March Brief stating that his earlier obviousness rejections citing Lai and Gerdes were no longer appropriate for the appeal because they were not part of the Examiner's most recent office action.¹⁹ In response, Applicants (1) filed a petition formally disputing the Examiner's rejection of the March Brief²⁰ and (2)

¹⁵ See August 2, 2006 Appeal Brief, pp. 23-34.

¹⁶ See September 28, 2006 Office Action, attached hereto as Reference R-9.

¹⁷ *Id.*, p. 2 (emphasis added).

¹⁸ See March 5, 2007 Appeal Brief, p. 15 (incorporating by reference August 2, 2006 Supplemental Appeal Brief, pp. 30-34).

¹⁹ See June 5, 2007 Notification of Non-Compliant Appeal Brief, attached hereto as Reference R-10.

²⁰ See Petition to Dispute the Notification of Non-Compliant Appeal Brief, attached hereto without exhibits as Reference R-11.

filed, in an abundance of caution, a Revised Supplemental Appeal Brief (hereinafter “June Brief”) and subsequently a Signed Revised Supplemental Appeal Brief (hereinafter “September Brief”) correcting and replacing the June Brief.²¹ The September Brief replaces the June Brief and, apart from the signature, is identical to the June Brief. Applicants’ petition was granted on September 14, 2007, and the Notification of Non-Compliant Brief was withdrawn.²² Consequently, the March Brief is pending.

On November 1, 2007, the Examiner issued an Examiner’s Answer.²³ In the Answer, however, the Examiner responded to the September Brief that was filed while awaiting a decision on the Petition.²⁴ Because the Notice of Non-Compliant Brief was withdrawn, however, Applicants’ believe that the September Brief is moot, and the March Brief is pending. Only the March Brief includes Applicants’ arguments regarding the still-pending obviousness rejections citing Lai and Gerdes directed to Applicants’ claims 23-29.

2. The Examiner fails to address still-pending obviousness rejections of claims 23-29 in light of Lai combined with Gerdes.

The Examiner’s rejection of claims 23-29 as being obvious over Lai in view of Gerdes is still pending. According to the MPEP, “[i]f applicant’s arguments are persuasive and upon reconsideration of the rejection, the examiner determines that the previous rejection should be withdrawn, the examiner *must* provide in the next Office communication the reasons why the previous rejection is withdrawn by referring

²¹ See September 27, 2007 Revised Supplemental Appeal Brief (identical to and correcting signature of June 29, 2007 Revised Supplemental Appeal Brief).

²² See September 14, 2007 Decision on Petition, attached hereto as Reference R-12.

²³ See November 1, 2007 Examiner’s Answer.

²⁴ *Id.*, p. 1.

specifically to the page(s) and line(s) of applicant's remarks which form the basis for withdrawing the rejection." MPEP §707.07 (emphasis added).

The Examiner never withdrew his obviousness rejection with respect to claims 23-29 nor suggested Applicants' arguments with respect to claims 23-29 were persuasive. Rather, in the Decision on Petition, the Director specifically directs the Examiner "in his next office action or by a separate letter to expressly state the reason for withdrawal of the rejections of *claims 3-7 and 16-22* under 35 U.S.C. 103(a) as being unpatentable over Lai et al. in view of Gerdes in accordance with the MPEP 707.07(f)."²⁵ The Director did not address the obviousness rejection of Applicants' claims 23-29 over Lai in view of Gerdes.²⁶ Likewise, in the Examiner's letter of explanation he only withdrew his obviousness rejection over Lai in view of Gerdes with respect to Applicants' claims 3-7 and 16-22.²⁷ Specifically, the rejection was not withdrawn with respect to Applicants' claims 23-29.²⁸

Without any express assertions to the contrary, Applicants must be prudent and assume that the Examiner has neither accepted Applicants' arguments nor withdrawn the obviousness rejection of claims 23-29 over Lai in view of Gerdes. Only the March Brief, which as explained above is Applicants' pending appeal brief, addresses claims 23-29. Accordingly, whether the Examiner rightfully determined that Applicants' claimed invention, as recited in claims 23-29, is obvious over Lai in view of Gerdes remains a matter for review by the Board of Patent Appeals and Interferences. Applicants have included arguments regarding this rejection in the Reply Arguments section below.

²⁵ See September 14, 2007 Decision on Petition (emphasis added).

²⁶ *Id.*

²⁷ See September 24, 2007 Communication from the Examiner, attached hereto as Reference R-13.

²⁸ *Id.*

B. Claims 23-29 Are Not Obvious Over Lai in View of Gerdes.

The Examiner never withdrew his rejection of claims 23-29 as being obvious over Lai in view of Gerdes, as detailed above. Applicants respectfully disagree with the Examiner's rejection.

Principles of Law Relating to Obviousness

The principles of law relating to obviousness are explained above in detail in section II.B. In short, a claim is *prima facie* obvious only if an analogous prior art reference (or references when combined) teaches or suggests all the claim limitations. If combining references, there must be "a *reason* that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does." *KSR* at 14, 127 S.Ct. at 1741 (emphasis added). If prior art teaches away from a combination of elements, however, discovery of a successful means of combining them is more likely to be nonobvious. *Id.* at 12, 127 S.Ct. at 1739; *see also In re Icon Health and Fitness* at 1381 (explaining that prior art is considered to teach away when modifying it would render the prior art inoperable or when a person of ordinary skill would be discouraged or misdirected upon reading of the reference).

1. Lai teaches away from handheld probes.

Each of Applicants' claims 23-29 teaches handheld probes. As detailed in Applicants' prior briefs,²⁹ Lai teaches away from handheld probes.

Lai solves the problem of how to relieve a practitioner from having to hold laser probes in his hands. Lai accomplishes this by providing laser diode modules that attach onto a patient's body during treatment using a self-adhesive holder. *See* Lai column 1,

²⁹ *See* August 2, 2006 Appeal Brief, pp. 23-24, and March 5, 2007 Appeal Brief, p. 15.

lines 38-39. Lai explains that “[i]t has an adhesive surface and allows to attach a diode laser module onto an acupuncture point of a body part *free of hand-holding*.” Lai column 1, lines 46-48 (emphasis added). “The holding mechanism is particularly advantageous since it *eliminates the need for hand holding the laser module* and allows the therapist to perform other tasks.” Lai column 2, lines 29-31, emphasis added. Lai would lead a person of ordinary skill in the art in a different direction than that taken by the Applicant and therefore expressly teaches away from probes that are hand-held.

Because Lai teaches away from using hand-held probes, a person of ordinary skill in the art would not find it obvious to combine Lai with Gerdes to achieve Applicants’ claimed invention. Accordingly, no *prima facie* case of obviousness has been made.

2. Lai teaches away from moving probes while emitting laser beams.

Each of Applicants’ claims 23-29 teaches a first handheld probe “from which the first laser beam emits, the first handheld probe ... freely moved by the user’s hand relative to the surface of the skin of a patient while emitting the first laser beam.” As detailed in Applicants’ prior briefs,³⁰ Lai also teaches away from freely moving probes *while* emitting laser beams.

As explained above, Lai solves the problem of how to relieve a practitioner from having to hold laser probes in his hands while they are emitting laser beams. Lai explains that:

[S]timulating five to ten acupuncture points are [sic] common and each takes typically five to thirty minutes. Thus, a therapist needs to point the laser beam to one acupuncture point then another for a long time. Obviously, using these devices is inconvenient and is time consuming.

³⁰ See August 2, 2006 Appeal Brief, pp. 24-25, and March 5, 2007 Appeal Brief, p. 15.

Lai at column 1, lines 27-31. Lai further teaches how to eliminate having to hold lasers while they are emitting laser beams, thereby allowing the therapist to perform other tasks during treatment. *See* Lai column 1, lines 47-48; column 2, lines 25-30. Indeed, all of Lai's claims specifically give the intended use of providing a laser diode module "without holding said respective diode laser module by a person's hand." *See* Lai column 3, lines 32-33; Lai column 4, lines 30. To make Lai's device with hand-held lasers would defeat the purpose of Lai's invention, and lead to a device that is inoperative under the basic principles under which Lai is designed to operate. Therefore, Lai expressly teaches against probes that are hand-held while emitting laser beams.

Because Lai teaches away from freely moving the probes while emitting laser beams, a person of ordinary skill in the art would not find it obvious to combine Lai with Gerdes to achieve Applicants' claimed invention. Accordingly, no *prima facie* case of obviousness has been made.

3. Lai and Gerdes teach away from freely moving the probes.

Each of Applicants' claims 23-29 teaches first and second handheld probes that are "freely moved by the user's hand relative to the surface of the skin of a patient while emitting the [first, second] laser beam." As detailed above and in Applicants' prior briefs,³¹ Lai and Gerdes both teach away from freely moving probes.

First, Gerdes teaches a device wherein the wands are positioned over the patient in such a manner that the radiation from the wands *intersect in one area* for the desired treatment of the patient. It would render Gerdes inoperable to modify it such that the

³¹ *See* August 2, 2006 Appeal Brief, pp. 25-26, and March 5, 2007 Appeal Brief, p. 15.

laser beams treated different areas of a patient at the same time, because then the laser beams would not intersect. Thus, Gerdes teaches against the probes moving freely.

Second, Lai teaches the use of a self-adhesive holder for each of the diode lasers to attach onto a patient's body. Lai column 1, lines 38-40. The self-adhesive holder is configured to securely hold the diode laser module and to maintain the laser beam at the acupuncture point. Lai column 2, lines 26-31. It would render Lai inoperable to modify it such that the laser modules moved freely because then they would not be maintained at the acupuncture point.

Because Lai and Gerdes teach away from freely moving the probes, a person of ordinary skill in the art would not find it obvious to combine the Lai with Gerdes to achieve Applicants' claimed invention. Accordingly, no *prima facie* case of obviousness has been made.

4. Lai and Gerdes do not teach ultraviolet laser light.

Applicants' claim 29 requires at least one laser energy source generating a laser beam having a wavelength in the ultraviolet range. Neither Lai nor Gerdes disclose or suggest generating a laser beam having a wavelength in the ultraviolet range.

As detailed in Applicants' prior briefs,³² ultraviolet light ranges from about 4 nm to less than 400 nm, just beyond violet in the visible spectrum of light. Gerdes only discloses aiming *visible* radiation having a wavelength of between approximately 400 nm and 700 nm. Similarly, Lai also does not disclose a wavelength of less than 500 nm. It is well-known that ultraviolet light is not visible light. See, e.g., RANDOM HOUSE UNABRIDGED DICTIONARY 2051 (2d ed. 1993) (defining ultraviolet as "beyond the violet

³² See August 2, 2006 Appeal Brief, pp. 27-28, March 5, 2007 Appeal Brief, pp. 15, 22-24, and 29-30, and September 27, 2007 Revised Supplemental Appeal Brief, pp. 22-23 and 29-30.

in the spectrum, corresponding to light having wavelengths shorter than 4000 angstrom units). Because Lai and Gerdes do not teach or suggest an ultraviolet wavelength, no *prima facie* case of obviousness has been made.

5. Conclusion.

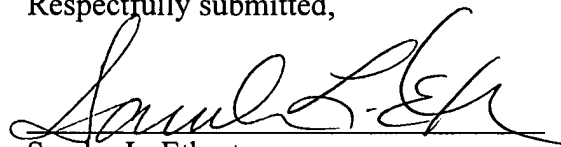
For one or more reasons above, Applicants have shown that claims 23-29 are not obvious under 35 USC 103(a) in light of Lai and Gerdes. Reversal of the rejections is respectfully requested.

IV. Conclusion

Applicants believe they have shown that none of the Examiner's rejections in the pending application should be sustained. Applicants respectfully request that the Board reverse all the Examiner's rejections and allow the case to proceed to issuance.

Date: _____

Respectfully submitted,



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Claims Appendix

Claims Appendix

1. A multi-probe device comprising:
 - a) two or more laser energy sources, each generating one or more laser beams;
 - b) two or more handheld probes from which the laser beams emit, wherein:
 - i. each of the handheld probes houses one or more laser energy sources therewithin;
 - ii. each of the handheld probes emits one or more laser beams, and each of the handheld probes is not connected to a support structure while being freely moved by a user's hand relative to the surface of the skin of a patient; and
 - c) an optical arrangement attached to each handheld probe for receiving one or more laser beams and for transforming each of the laser beams into a desired spot shape.
2. A device according to claim 1 wherein at least two of the laser beams are emitted simultaneously and impinge two different parts of a patient's body.
3. A device according to claim 1 further comprising one or more control circuits for independently controlling each of the generated laser beams.

4. A device according to claim 1 further comprising a control circuit for controlling the pulse repetition rate of each laser beam.
5. A device according to claim 4 wherein the pulse repetition rate of at least one of the laser beams is such that the laser light emitted is substantially continuous.
6. A device according to claim 4 further comprising a first laser beam having a first pulse repetition rate and a second laser beam having a second pulse repetition rate wherein the first pulse repetition rate and the second pulse repetition rate are different.
7. A device according to claim 4 further comprising a first laser beam having a first pulse repetition rate and a second laser beam having a second pulse repetition rate wherein the first pulse repetition rate and the second pulse repetition rate are the same.
8. A device according to claim 1 wherein each of the laser energy sources is less than one watt.
9. A device according to claim 1 wherein at least one of the laser energy sources is a semiconductor diode.
10. A device according to claim 1 further comprising a base.

13. A device according to claim 1 wherein at least one laser energy source generates a laser beam having a wavelength in the visible range.
14. A device according to claim 13 wherein the wavelength of the laser beam is in the red range of the visible spectrum.
15. A device according to claim 1 wherein at least one laser energy source generates a laser beam having a wavelength in the infrared range.
16. A device according to claim 1 wherein at least one laser energy source generates a laser beam having a wavelength in the ultraviolet range.
17. A device according to claim 1 wherein at least one of the spot shapes is substantially linear.
18. A device according to claim 1 wherein at least one of the spot shapes is substantially circular.
19. A device according to claim 1 wherein at least one of the spot shapes is substantially in the shape of a plus-sign.

20. A device according to claim 1 wherein at least one of the spot shapes is substantially elliptical.
21. A device according to claim 1 further comprising a first laser beam having a first spot shape and a second laser beam having a second spot shape wherein the first spot shape is different from the second spot shape.
22. A device according to claim 1 further comprising a first laser beam and a second laser beam having the same spot shape.
23. A therapeutic laser device comprising:
 - a) a first semiconductor diode laser energy source generating a first laser beam and a second semiconductor diode laser energy source generating a second laser beam;
 - b) a first handheld probe from which the first laser beam emits, the first handheld probe having an interior cavity that houses the first semiconductor laser energy source therewithin and that is freely moved by the user's hand relative to the surface of the skin of a patient while emitting the first laser beam;
 - c) an optical arrangement mounted in the interior cavity of the first handheld probe for receiving the first laser beam and for transforming the first laser beam into a desired spot shape;

- d) a second handheld probe from which the second laser beam emits, the second handheld probe having an interior cavity that houses the second semiconductor laser energy source therewithin and that is freely moved by the user's hand relative to the surface of the skin of a patient and relative to the first handheld probe while emitting a laser beam;
 - e) an optical arrangement mounted in the interior cavity of the second handheld probe for receiving the second laser beam and for transforming the second laser beam into a desired spot shape; and
 - f) a control circuit for independently controlling each of the generated laser beams; and
 - g) wherein the first and second handheld probes are not connected to a support structure while being freely moved relative to the surface of the skin of a patient.
24. A device according to claim 23 further comprising a base.
25. A device according to claim 24 wherein the control circuit is housed in the base.
26. A device according to claim 23 wherein at least one laser energy source generates a laser beam having a wavelength in the visible range.
27. A device according to claim 26 wherein the wavelength of the laser beam is in the red range of the visible spectrum.

28. A device according to claim 23 wherein at least one laser energy source generates a laser beam having a wavelength in the infrared range.
29. A device according to claim 23 wherein at least one laser energy source generates a laser beam having a wavelength in the ultraviolet range.
30. A multi-probe device comprising:
 - a) two or more laser energy sources housed in two or more handheld probes for generating two or more laser beams of only visible light wherein each beam of visible light is emitted at a different wavelength from the other beams of visible light;
 - b) wherein each of the handheld probes is retained in a hand of a user and freely moved relative to the surface of the skin of a patient; and
 - c) an optical arrangement attached to each handheld probe for receiving the laser beams and for transforming each of the laser beams into a desired spot shape.
32. A device according to claim 30 wherein the wavelengths of the laser beams are in the red range of the visible spectrum.

References Cited Appendix

List of References

- R-1** U.S. Patent 6,074,411 issued to Lai (referred to herein as “Lai”)
- R-2** Office action dated November 10, 2005
- R-3** Appeal Brief dated August 2, 2006
- R-4** Appeal Brief dated March 5, 2007
- R-5** Revised Supplemental Appeal Brief dated September 27, 2007 (identical to and correcting signature of June 29, 2007 Revised Supplemental Appeal Brief)
- R-6** Examiner’s Answer dated November 1, 2007
- R-7** U.S. Patent 6,267,779 issued to Gerdes (referred to herein as “Gerdes”)
- R-8** U.S. patent 5,653,706 issued to Zavislan (referred to herein as “Zavislan”)
- R-9** Office action dated September 28, 2006
- R-10** Notification of Non-Compliant Appeal Brief dated June 5, 2007
- R-11** Petition to Dispute the Notification of Non-Compliant Appeal Brief dated June 29, 2007
- R-12** Decision on Petition dated September 14, 2007
- R-13** Communication for the Examiner dated September 24, 2007
- R-14** Applicants’ Specification of U.S. Patent App. No. 10/612,504, as amended, and Drawings

Reference R-2



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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33354 7590 11/10/2005

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EXAMINER

JOHNSON III, HENRY M

ART UNIT	PAPER NUMBER
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3739

DATE MAILED: 11/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/612,504	Applicant(s) SHANKS ET AL.	
	Examiner Henry M. Johnson, III	Art Unit 3739	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2005.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10, 13-30, 32 and 35-39 is/are pending in the application.
- 4a) Of the above claim(s) 35-39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 13-30 and 32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>081205</u> | 6) <input type="checkbox"/> Other: _____ |

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Response to Arguments

Applicant's arguments filed October 3, 2005, with respect to the rejections of claims 1-7, 9, 10 and 23-25 under Tatebayashi et al. and claims 30 and 32 under Gerdes, have been fully considered and are persuasive. Therefore, the rejections have been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of U.S. Patent 6,074,411 to Lai.

Election/Restrictions

Newly submitted claims 35-39 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Surgical methods are classified in 128/898 while light therapeutic devices are classified in 607/89.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 35-39 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Specification

Full continuation data is required in the first paragraph of the specification; i.e. This application is a continuation-in-part of U.S. Patent Application 09/932,907 filed August 20, 2001, now U.S. Patent 6,746,473 which claims the benefit of U.S. Provisional Application No. 60/273,282 filed March 2, 2001.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or

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improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-10, 13-14, 17, 18, 21 and 23-27 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-11 and 13 of U.S. Patent No. 6,746,473. Although the conflicting claims are not identical, they are not patentably distinct from each other because they are an obvious change in scope. A controller is claimed, yet not claimed in the wand, implying the controller is in another component (base).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 8-10, 13-15, 22, 30 and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 6,074,411 to Lai et al. Lai et al. teach a multiple laser diode apparatus for therapy using multiple hand-movable probes (Fig. 1), each with a laser diode with

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a wavelength between 500 and 1500 nanometers operating at about 5 mW (Col. 2, lines 42-45) and the probe is disclosed as having focusing optics (Col. 2, lines 32-35). Focusing optics inherently provide some spot shape.

Regarding claim 2, the destination of the beams is intended use with no further limitation on the device structure.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-7, 16-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,074,411 to Lai et al. as applied to claim 1 above, and further in view of U.S. Patent 6,267,779 to Gerdes. Lai et al. is discussed above but does not disclose independent control of the lasers, ultraviolet wavelengths or beam shape. Gerdes discloses an apparatus for therapeutic laser treatment that includes handheld wands (Fig. 7) that each may deliver two wavelengths of laser energy, one in the near infrared range and the other in the visible range (Col. 8, line 54) from solid-state diode lasers (Col. 7, lines 22-24). The beams are combined and delivered to the wands that include adjustable optics to focus and shape the beams (Col. 8, lines 31-34). The beam shape may be circular or rectangular (Col. 9, line 49), or a variety of other patterns. A controller for the sources is disclosed that may control the pulse parameters, including, continuous or pulsed, pulse duty cycle and duration of application for each of the radiation sources synchronously or independently with continuous operation possible by selection of a duty cycle of 100 percent (Col. 11, lines 3-8). Specifically mentioned is a pulse frequency of one hertz (Col. 11, line 63). The system is capable of emitting radiation at less

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than one watt; with 0 to 2.0 W specified for the infrared and 0 to 6 mW specified for the visible (Col. 9, lines 14 and 31). The wavelength disclosed for red is 635 nm (col. 9, line 39), for ultraviolet is 400 nm (Col. 9, line 38) and for infrared is 980 nm (Col. 9, line 27). The handheld wands are connected to the radiation sources within the controller cabinet (base) via optical fibers (Col. 8, lines 23-25). Gerdes discloses a mode in which only the two red aiming beams are generated (Col. 11, lines 45-50), after which, a routine is executed to determine if operation of the therapeutic laser is proper. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the control parameters, spot sizes and ultraviolet wavelengths as taught by Gerdes in the invention of Lai et al. to effect a wide range of therapy from the device. Further, all of the variable parameters are well known in the art and would be considered routine to vary in a course of treatment.

Claims 23-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,074,411 to Lai et al. in view of U.S. Patent 6,267,779 to Gerdes. Both have been previously discussed. Both Lai et al. and Gerdes teach a base unit that houses the control circuits for the lasers. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the control parameters, spot sizes and ultraviolet wavelengths as taught by Gerdes in the invention of Lai et al. to effect a wide range of therapy from the device. Further, all of the variable parameters are well known in the art and would be considered routine to vary in a course of treatment.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

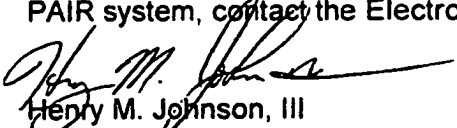
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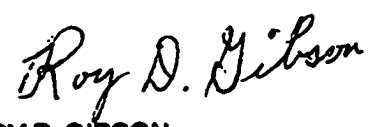
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Henry M. Johnson, III whose telephone number is (571) 272-4768. The examiner can normally be reached on Monday through Friday from 6:00 AM to 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Linda C. Dvorak can be reached on (571) 272-4764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Henry M. Johnson, III
Patent Examiner
Art Unit 3739


ROY D. GIBSON
PRIMARY EXAMINER

Reference R-3



08-04-06

AF/CC
3739/B

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Applicants: SHANKS, Steven C. and TUCEK, Kevin B.

Title of Invention: Multi-Probe Device

Filed: July 1, 2003

Serial Number: 10/612,504

Atty Docket No.: 206-038

Examiner: Henry M. Johnson, III

Art Unit: 3739

CERTIFICATE OF EXPRESS MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as EXPRESS MAIL, postage paid, in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on:

Date

8/2/06

Sandra L. Etherton

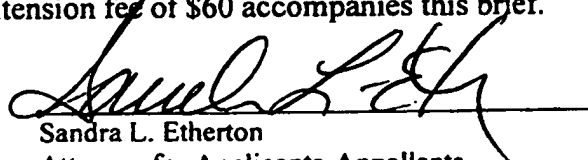
Express Mail Number: ED 700 061 088 US

APPEAL BRIEF

Mail Stop Appeal Brief
Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

A Notice of Appeal was filed May 2, 2006 which subsequently requires an appeal brief to be filed within two months. This Appeal Brief is submitted within three months of the Notice of Appeal and Applicants petition for a one-month extension. A charge form for the appeal fee of \$250 and the extension fee of \$60 accompanies this brief.


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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Applicants: SHANKS, Steven C. and TUCEK, Kevin B.

Title of Invention: Multi-Probe Device

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Examiner: Henry M. Johnson, III

Art Unit: 3739

APPEAL BRIEF

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In re Fulton, 391 F. 3d 1195, 73 USPQ2d 1141 (Fed. Cir. 2004)

In re Gordon, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)

In re Grasselli, 218 USPQ 769 (Fed. Cir. 1983)

Hansgird v. Kemmer, 40 USPQ 665 (CCPA 1939)

In re King, 231 USPQ 136 (Fed. Cir. 1986)

In re Oelrich and Divigard, 212 USPQ 323 (CCPA 1981)

In re Ratti, 123 USPQ 349 (CCPA 1959)

In re Rijckaert, 28 USPQ2nd 1955 (Fed. Cir. 1993)

In re Rouffet, 149 F.3d 1350, 47 USPQ2d 1453 (Fed. Cir. 1998)

MEHL/Biophile Int'l Corp. v. Milgraum, 52 USPQ2d 1303 (Fed. Cir. 1999)

Verdegaal Brothers, Inc. v. Union Oil Company of California, 2 USPQ2d 1051 (Fed. Cir. 1987)

List of References

- R-1 Applicants' Specification and Drawings of U.S. Patent Application No. 10/612,504, as amended (referred to herein as the "Pending App.")
- R-2 U.S. Patent 6,074,411 issued to Lai (referred to herein as "Lai")
- R-3 U.S. Patent 6,267,779 issued to Gerdes (referred to herein as "Gerdes")
- R-4 Office action dated November 10, 2005

Copies of the references above are included in the References Cited Appendix

Manual of Patent Examining Procedure, Eighth Edition, August 2001, Rev. 4 October 2005

MPEP §2112.02

MPEP §2142

MPEP §2143.01

MPEP §2146

I. Real Party in Interest

The real parties in interest are the inventors, Steven C. Shanks and Kevin B. Tucek.

Appellants note that, in the event a terminal disclaimer is required to avoid a double-patenting type obviousness rejection, upon a notice of allowance and assuming such terminal disclaimer is still required, Applicants will file a terminal disclaimer and an assignment fully complying with 37 CFR § 1.321 and 37 CFR § 3.73. In such case, the real parties in interest will include Erchonia Patent Holdings, LLC, owned in the majority by the inventors.

II. Related Appeals and Interferences

No appeals or interferences are pending which may be related to, directly affect, be directly affected by, or have a bearing on the Board's decision in the pending appeal, however the following are, or were, copending patent applications or litigation related to the application on appeal:

Type	Application or Patent Number	How Related to Application on Appeal	Atty Docket Number
US Patent	6,605,079	this patent claims the benefit of common priority application U.S. Provisional Application No. 60/273,282	206-001
US Patent	09/932,907 now U.S. Pat. No 6,746,473	this application claims the benefit of common priority application U.S. Provisional Application No. 60/273,282	206-002
PCT Application	PCT/US2002/019359	PCT application, and national stage applications and issued patents therefrom, claim the benefit of the common priority application US Pat. Application No. 09/932,907, now U.S. Pat. No 6,746,473, which claims the benefit of common priority application U.S. Provisional Application No. 60/273,282	206-021
CIP of related application	10/772,973	this application claims the benefit of common priority application U.S. Application No. 09/932,907, now U.S. Pat. No 6,746,473, which claims the benefit of U.S. Provisional Application No. 60/273,282	206-024
CIP of related application	10/772,738	this patent application claims the benefit of common priority application U.S. Application No.	206-032

		09/932,907, now U.S. Pat. No 6,746,473, which claims the benefit of U.S. Provisional Application No. 60/273,282	
judicial proceeding in Federal District Court of Colorado*	04-MK-1769 (CBS)	litigation alleging infringement of U.S. Pat. No 6,746,473 and invalidity thereof, et alia. U.S. Pat. No 6,746,473, which claims the benefit of U.S. Provisional Application No. 60/273,282	206-066
CIP of Patent Application on appeal	11/443980	this application claims the benefit of the application on appeal, which claims benefit of the common priority application 09/932,907, now U.S. Pat. No 6,746,473, which claims the benefit of U.S. Provisional Application No. 60/273,282	206-071
DIV of Patent Application on appeal	11/431257	this application claims the benefit of the application on appeal, which claims benefit of the common priority application 09/932,907, now U.S. Pat. No 6,746,473, which claims the benefit of U.S. Provisional Application No. 60/273,282	206-133

* A Markman hearing was held in Colorado District Court action 04-MK-1769 (CBS) to construe certain claims of U.S. Patent No. 6,746,473, which claims the benefit of common priority application 09/932,907, now U.S. Pat. No. 6,746,473. That decision is attached in the Related Proceedings Appendix as Appendix RP-1. No other decisions have been rendered by a court or the Board in any proceeding identified under this section.

III. Status of the Claims

Claims 1-10, 13-30, and 32 of U.S. Patent Application No. 10/612,504 are pending and stand rejected twice and constitute the subject matter of this appeal. Claims 11-12, 31, 33 -34 have been cancelled. Claims 35-39 were withdrawn by the Examiner.

IV. Status of Amendments

Applicant proposed amendments subsequent to the final office action dated November 10, 2005. Those amendments were considered, but not entered, by the Examiner.

Claim amendments made in response to an office action dated June 3, 2005 were entered by the Examiner in an office action dated November 10, 2005. Those amended claims constitute the subject matter of this appeal and appear in the Claims Appendix as Appendix A.

V. Summary of Claimed Subject Matter

In U.S. Patent Application No. 10/612,504, the Applicants present a single laser device that enables a practitioner to personally and freely treat different areas of a patient at the same time. Pending App. paragraphs [0005], [0006], [0007] and [0024] and Fig. 7. This is an improvement over prior art because earlier devices could not freely treat different areas of a patient at the same time.

The claimed device also enables a practitioner to personally and freely treat a patient using multiple laser beam emissions each with a specific spot shape, such as a line. Pending App. paragraphs [0018], lines 1-3. This has the advantage of enabling the practitioner to more precisely define the surface area the laser impinges upon. A copy of Applicants' specification, as amended, and drawings are enclosed for easy reference as Appendix R-1. The claims on appeal are listed in the Claims Appendix.

A. Independent Claim 1

Claim 1 defines a device (Pending App. paragraph [0015], line 1) having two or more handheld probes (Pending App. paragraph [0015], line 4). Each of the probes houses one or more laser energy sources (Pending App. paragraph [0016], lines 1-3) and each laser energy source produces a laser beam that is shown through an optical arrangement to produce a desired spot shape (Pending App. paragraph 0017, lines 1-3). Each probe is moved freely by the user while the laser beams are being emitted (Pending App. paragraphs [0015] and [0024]; Fig. 7).

B. Independent Claim 23

Claim 23 generally defines the same device as claim 1, except that it specifies that the laser energy sources must be semiconductor laser diodes and adds a control circuit for controlling the laser beams. Specifically, Claim 23 covers a laser device (Pending App. paragraph [0015], line 1) having first and second handheld probes (Pending App. paragraph [0015], line 4). Each of the probes has a semiconductor diode (Pending App. paragraph [0022], lines 3-7) laser energy source (Pending App. paragraph [0016], lines 1-3), and each laser energy source produces a laser beam that is shown through an optical arrangement to produce a desired spot shape (Pending App. paragraph [0017], lines 1-3). There is a control circuit for independently controlling each of the laser beams (Pending App. paragraph [0020], lines 1-9). Each probe is freely moved by the user's hand relative to the surface of the skin of a patient while emitting the first laser beam (Pending App. Paragraphs [0015] and [0024]; Fig. 7).

C. Independent Claim 30

Claim 30 generally defines the same device as claim 1 except that it specifies that each laser beam emits a different wavelength of visible light. Specifically, Claim 30 covers a device having two or more laser energy sources (Pending App. paragraph [0016], lines 1-3) housed in two or more handheld probes (Pending App. paragraph [0015], line 4). Each laser beam emits a visible wavelength (Pending App. paragraph [0022], lines 2-8) shown through an optical arrangement to produce a desired spot shape (Pending App. paragraph [0017], lines 1-3). Each probe can be moved freely by the user while the laser beams are being emitted (Pending App. Paragraphs [0015] and [0024]; Fig. 7).

None of the claims on appeal recite means-plus-function limitations.

VI. Grounds of Rejection to be Reviewed on Appeal

- A. Are Claims 1, 2, 8-10, 13-15, 22, 30 and 32 unpatentable under 35 USC 102(b) as being anticipated by U.S. Patent 6,074,411 issued to Lai?**
- B. Are Claims 3-7, 16-22, and 23-29 unpatentable under 35 USC 103(a) as being obvious in light of Lai in view of U.S. Patent 6,267,779 issued to Gerdes?**
- C. Are Claims 1-10, 13-14, 17, 18, 21, and 23-27 unpatentable as double-patenting claims 1-11 and 13 of U.S. Patent 6,746,473 issued to Shanks and Tucek??**

VII. Argument

A. Lai Does Not Anticipate Applicants' Claims under 35 USC 102(b)

Legal Standard for Anticipation

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Brothers, Inc. v. Union Oil Company of California*, 2 USPQ2d 1051 (Fed. Cir. 1987). Under the principles of inherency, if the prior art in its normal and usual operation would necessarily perform the method claimed, then the method claimed will be considered to be anticipated. MPEP §2112.02. See *MEHL/Biophile Int'l Corp. v. Milgraum*, 52 USPQ2d 1303, 1305 (Fed. Cir. 1999) (citing *In re King*, 231 USPQ 136, 138 (Fed. Cir. 1986)). However, the fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. MPEP §2112.02 (citing *In re Rijckaert*, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993); *In re Oelrich and Divigard*, 212 USPQ 323, 326 (CCPA 1981) (citing *Hansgirk v. Kemmer*, 40 USPQ 665 (CCPA 1939)).

Applicants' burden is to prove that that Lai's device would not perform the claimed invention in its normal and usual operation. See *In re King* at 138.

1. Lai Does Not Anticipate Claims 1, 2, 8-10, 13-15, and 22 Because Lai Does Not Disclose Moving Probes While Emitting Laser Beams

Each of Applicants' claims 1, 2, 8-10, 13-15, and 22 claims handheld probes that "emit one or more laser beams ...while being freely moved by a user's hand..."¹

Lai does not disclose however, that the probes emit one or more laser beams while being freely moved by a user's hand. Instead, Lai discloses how to eliminate having to hold lasers while they are emitting laser beams, thereby allowing the therapist to perform other tasks during treatment. See Lai column 1, lines 47-48; column 2, lines 25-30. Indeed all of Lai's claims specifically give the intended use of providing a hands-free laser diode module during laser treatment. See, e.g. Lai column 3, lines 32-33 ("without holding said respective diode laser module by a person's hand"); Lai column 4, line 30 ("without holding by a person's hand").

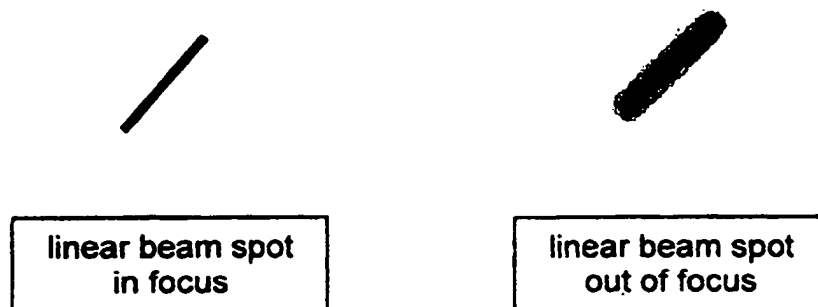
The fact that a practitioner using the Lai device may move the probes while they emit laser light is not sufficient to establish the inherency of that result or characteristic. During normal and usual operation, a person operating Lai's device would not move the probes while they emit laser light. On the contrary, handholding the probes of Lai's device while they emit laser light would defeat the stated purpose of Lai's invention. Therefore, handheld probes that are freely moveable during laser operation are not inherently disclosed by Lai. Accordingly, claims 1, 2, 8-10, 13-15 and 22 are not anticipated by Lai.

¹ To forestall any confusion about the placement of the "support structure" limitation in claim 1 without a trailing comma and whether Applicants intended laser beams to be moved during treatment, Applicants note that clause (b)(ii) of claim 1 as amended in the RCE dated April 27, 2005, reads "each of the handheld probes emits one or more laser beams while being freely moved by a user's hand relative to the surface of the skin of the patient."

2. Lai Does Not Anticipate Claims 1, 2, 8-10, 13-15, and 22 Because Lai Does Not Disclose a Beam-Shaping Apparatus

Each of Applicants' claims 1, 2, 8-10, 13-15, and 22 claims "an optical arrangement for receiving one or more laser beams and for transforming each of the laser beams into a desired spot shape."

Lai does not expressly or inherently disclose, however, an optical arrangement to transform the beams into a desired spot shape. Instead, Lai discloses only focusing optics. See Lai column 2, lines 33-34. Focus is not the same thing as shape. Focus refers to how clear or fuzzy the image is, whereas shape refers to the perimeter geometry of the image as it impinges the patent's skin. See Pending App. paragraph [0017]. Focus is defined in optics as "the clear and sharply defined condition of an image" and "the position of a viewed object or the adjustment of an optical device necessary to product a clear image." RANDOM HOUSE UNABRIDGED DICTIONARY 742 (2nd ed. 1987) (attached as Exhibit E-1). A device can emit a laser beam that is in or out of focus, and focusing the beam will not change the resultant shape. That is, focusing optics are not inherent in beam shaping optical arrangements. For example, a linear beam has a linear shape, but may be in or out of focus:



Similarly a circular beam spot may be in or out of focus:



circular beam spot
in focus



circular beam spot
out of focus

Similarly a square beam spot may be in or out of focus:



square beam spot
in focus



square beam spot
out of focus

Focusing optics do not necessarily provide an apparatus for obtaining a desired spot shape. Therefore, Lai does not disclose, either expressly or inherently, an optical arrangement for transforming the beam shape, and claims 1, 2, 8-10, 13-15 and 22 are not anticipated by Lai.

3. Lai Does Not Anticipate Claims 1, 2, 8-10, 13-15, and 22 Because Lai Does Not Disclose a Spot Shape

Each of Applicants' claims 1, 2, 8-10, 13-15, and 22 claims "an optical arrangement for receiving one or more laser beams and for transforming each of the laser beams into a desired spot shape."

A spot shape is the result of a beam shape, as explained in Applicants' specification at paragraph [0017]. Lai does not disclose a beam shape, as admitted by the

Examiner on page 4 of the office action dated November 10, 2005: "Lai et al. is discussed above but does not disclose independent control of the lasers, ultraviolet wavelengths or beam shape." Instead, Lai discloses only how to focus a beam. However, focus is not the same thing as shape. Focus refers to how clear or fuzzy the image is, whereas shape refers to the perimeter geometry of the image as it impinges the patent's skin as illustrated in the figures above, which are incorporated into this section by reference. *See also Pending App. paragraph [0017].* Focus is defined in optics as "the clear and sharply defined condition of an image" and "the position of a viewed object or the adjustment of an optical device necessary to product a clear image." RANDOM HOUSE DICTIONARY AT 742. A device can emit a laser beam that is in or out of focus, and focusing the beam will not change the underlying shape. That is, a spot shape is not inherent in focusing optics.

Lai does not disclose, either expressly or inherently, a spot shape. Therefore, claims 1, 2, 8-10, 13-15 and 22 are not anticipated by Lai.

4. Lai Does Not Anticipate Claims 30 and 32 Because Lai Does Not Disclose Hand-held Probes While Emitting Laser Beams

Each of Applicants' claims 30 and 32 claims "...handheld probes for generating two or more laser beams of only visible light ...wherein each of the handheld probes is retained in a hand of a user and freely moved relative to the surface of the skin of a patient."

Lai does not disclose that the probes emit one or more laser beams while being freely moved by a user's hand. Instead, Lai discloses how to eliminate having to hold lasers while they are emitting laser beams, thereby allowing the therapist to perform other

tasks during treatment. *See* Lai column 1, lines 47-48; column 2, lines 25-30. Indeed all of Lai's claims specifically give the intended use of providing a hands-free laser diode module during laser treatment. *See e.g.* Lai column 3, lines 32-33 ("without holding said respective diode laser module by a person's hand" Lai column 4, Line 30 ("without holding by person's hand").

The fact that a practitioner using the Lai device may move the probes while they emit laser light is not sufficient to establish the inherency of that result or characteristic. During normal and usual operation, a person operating Lai's device would not move the probes while they emit laser light. On the contrary, handholding the probes of Lai's device while they emit laser light would defeat the stated purpose of Lai's invention. Therefore, handheld probes that are freely moveable during laser application are not inherently disclosed by Lai. Accordingly, claims 30 and 32 are not anticipated by Lai.

5. Lai Does Not Anticipate Claims 30 and 32 Because Lai Does Not Disclose a Beam-Shaping Apparatus

Each of Applicants' claims 30 and 32 claims "an optical arrangement attached to each handheld probe for receiving the laser beams and for transforming each of the laser beams into a desired spot shape.

Again, Lai does not expressly or inherently disclose an optical arrangement to transform the beams into desired spot shape. Instead, Lai discloses only focusing optics. *See* Lai column 2, line 30. Focus is not the same thing as shape. Focus refers to how clear or fuzzy the image is, whereas shape refers to the perimeter geometry of the image as it impinges the patient's skin. *See* Pending App. paragraph [0017]. Focus is defined in optics

as “the clear and sharply defined condition of an image” and “the position of a viewed object or the adjustment of an optical device necessary to product a clear image.”

RANDOM HOUSE DICTIONARY AT 742. A device can emit a laser beam that is in or out of focus, and focusing the beam will not change the resultant shape. That is, an optical arrangement for transforming the beam shape is not inherent in focusing optics.

Lai does not disclose, either expressly or inherently, an optical arrangement for transforming the beam shape. Therefore, claims 30 and 32 are not anticipated by Lai.

6. Lai Does Not Anticipate Claims 30 and 32 Because Lai Does Not Disclose a Spot Shape

Each of Applicants' claims 30 and 32 claims “an optical arrangement attached to each handheld probe for receiving the laser beams and for transforming each of the laser beams into a desired spot shape.”

Again, a spot shape is the result of a beam shape, as explained in Applicants' specification. Pending App. at paragraph [0017]. Lai does not disclose a beam shape, however, as admitted by the examiner on page 4 of the office action dated November 10, 2005. Examiner's quote, *supra* p. 19. Instead, Lai discloses only how to focus a beam. Focus is not the same thing as shape. Focus refers to how clear or fuzzy the image is, whereas shape refers to the perimeter geometry of the image as it impinges the patent's skin as illustrated by the figures above, which are incorporated into this section by reference. *See also* Applicants' specification at paragraph [0017]. Focus is defined in optics as “the clear and sharply defined condition of an image” and “the position of a viewed object or the adjustment of an optical device necessary to product a clear image.”

RANDOM HOUSE DICTIONARY AT 742. A device can emit a laser beam that is in or out of focus, and focusing the beam will not change the underlying shape. That is, a spot shape is not inherent in focusing optics.

Lai does not disclose, either expressly or inherently, a spot shape. Therefore, claims 30 and 32 are not anticipated by Lai.

Conclusion

Applicants have shown that Claims 1, 2, 8-10, 13-15, 22, 30 and 32 are not anticipated under 35 USC 102(b) by Lai, and reversal of the rejection is respectfully requested.

B. Applicants' Claims are Not Obvious Under 35 USC 103(a)

Legal Standard for Obviousness

To establish a *prima facie* case of obviousness, there must be some suggestion or motivation to modify the reference or combine the teachings. MPEP §2142; *In re Rouffet*, 149 F.3d 1350, 1356, 47 USPQ2d 1453, 1456 (Fed. Cir. 1998); *In re Geiger* 815 F.2d 686, 688, 2 USPQ2d 1276, 1278 (Fed. Cir. 1987). The references must be considered as a whole, and there must be something in the prior art as a whole to suggest the desirability of the combination. MPEP §2142; *In re Fulton*, 391 F.3d 1195, 73 USPQ2d 1141 (Fed. Cir. 2004). Moreover, it is improper to combine references when one teaches away from the combination or renders the device inoperable for its intended purpose. *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). *See also* MPEP §2146; *In re Grasselli*, 218 USPQ 769, 779 (Fed. Cir. 1983); *In re Ratti*, 123 USPQ 349, 352, CCPA 1959.

1. Claims 3-7 and 16-22 are Not Obvious in Light of Lai and Gerdes Because Lai Teaches Against Hand-held Probes

Each of Applicants' claims 3-7 and 16-22 teaches probes that are handheld and freely moved by the user's hand. Although Gerdes teaches hand-held wands, Lai expressly teaches away from hand-held wands. It is well-settled law that it is improper to combine references when one teaches away from the combination or renders the device inoperable for its intended purpose. *In re Gordon*, 221 USPQ at 1127.

The problem solved by Lai is how to relieve a practitioner from having to hold laser probes in his hands. Lai accomplishes this by providing laser diode modules that attach onto a patient's body during treatment using a self-adhesive holder. *See* Lai

column 1, lines 38-39. Lai explains that “[i]t has an adhesive surface and allows to attach a diode laser module onto an acupuncture point of a body part *free of hand-holding*.” Lai column 1, lines 46-48 (emphasis added). “Such holding mechanism is particularly advantageous since it *eliminates the need for hand holding the laser module* and allows the therapist to perform other tasks.” Lai column 2, lines 29-31 (emphasis added). Nowhere in Lai’s disclosure is there any suggestion that handheld wands are desirable. Instead Lai expresses the opposite: the desire is not to have hand-held wands. Therefore, Lai expressly teaches against probes that are handheld. Because it is improper to combine references when one teaches away from the combination, Lai and Gerdes should not be combined, and no *prima facie* case of obviousness has been made.

2. Claims 3-7 and 16-22 are Not Obvious in Light of Lai and Gerdes Because Lai Teaches Against Moving Probes While Emitting Laser Beams

Each of Applicants’ claims 3-7 and 16-22 teaches handheld probes that “emit one or more laser beams ...while being freely moved by a user’s hand...”² Lai expressly teaches away from moving the probes while laser beams are being emitted. Again, is well settled that it is improper to combine references when one teaches away from the combination or renders the device inoperable for its intended purpose. *In re Gordon*, 221 USPQ at 1127.

The problem solved by Lai is how to relieve a practitioner from having to hold laser probes in his hands while they are emitting laser beams. Lai explains that:

²To forestall any confusion about the placement of the “support structure” limitation in claim 1 without a trailing comma and whether Applicants intended laser beams to be moved during treatment, Applicants note that clause (b)(ii) of claim 1 as amended in the RCE dated April 27, 2005, reads “each of the handheld probes emits one or more laser beams while being freely moved by a user’s hand relative to the surface of the skin of the patient.”

[S]timulating five to ten acupuncture points are [sic] common and each takes typically five to thirty minutes. Thus, a therapist needs to point the laser beam to one acupuncture point then another for a long time. Obviously, using these devices is inconvenient and is time consuming.

Lai at column 1, lines 27-31. Lai goes on to teach how to eliminate having to hold lasers while they are emitting laser beams, thereby allowing the therapist to perform other tasks during treatment. See Lai column 1, lines 47-48; column 2, lines 25-30. Indeed all of Lai's claims specifically give the intended use of providing a hands-free laser diode module during laser treatment. See e.g. Lai column 3, lines 32-33 ("without holding said respective diode laser module by a person's hand"; Lai column 4, line 30 ("without holding by a person's hand). To make Lai's device with hand-held lasers would defeat the purpose of Lai's invention and lead to a device that is inoperative under the basic principles under which Lai is designed to operate. Therefore, Lai expressly teaches against probes that are hand-held while emitting laser beams.

Because it is improper to combine references when one teaches away from the combination or renders the device inoperable for its intended purpose, Lai and Gerdes cannot be combined, and no *prima facie* case of obviousness has been made.

3. Claims 3-7 and 16-22 are Not Obvious in Light of Lai and Gerdes Because the Prior Art Teaches Against Freely Moving the Probes

The explicit purpose of Applicants' invention is to enable a practitioner to personally and freely treat different areas of a patient at the same time. Pending App. Paragraphs [0006] and [0007]. Each of Applicants' claims 3-7 and 16-22 teach handheld probes that "emit one or more laser beams ...while being freely moved by a user's hand

relative to the surface of the skin of a patient.” Gerdes and Lai each teach away from freely moving the probes, albeit for different reasons. It is improper to combine references when one teaches away from the combination or renders the device inoperable for its intended purpose. *In re Gordon*, 221 USPQ at 1127.

Gerdes teaches a device wherein the wands are positioned over the patient in such a manner that the radiation from the wands intersects within the body being treated. *See* Gerdes column 1, lines 9-12; column 4, lines 45-50 and 56-59. Logically, for the laser beams to intersect, the wands must be treating substantially the same area of the patient. It would render Gerdes inoperable to modify it such that the laser beams treated different areas of a patient at the same time because then the laser beams would not intersect. Thus, Gerdes teaches against the probes moving freely.

Lai teaches the use of a self-adhesive holder for each of the diode lasers to attach onto a patient’s body. Lai column 1, lines 38-40. The self-adhesive holder is configured to securely hold the diode laser module and to maintain the laser beam at the acupuncture point. Lai column 2, lines 26-31. It would render Lai inoperable to modify it such that the laser modules moved freely because then they would not be maintained at the acupuncture point.

Because it is improper to combine references when one teaches away from the combination or renders the device inoperable for its intended purpose, and because in this case both prior art references teach away from moving the probes freely, Lai and Gerdes cannot be combined. Accordingly, no *prima facie* case of obviousness has been made.

4. Claim 16 is Not Obvious in Light of Lai and Gerdes Because Neither Lai Nor Gerdes Suggests Using Ultraviolet Laser Light

Applicants' claim 16 claims at least one laser energy source generating a laser beam having a wavelength in the ultraviolet range. Neither Lai nor Gerdes disclose or suggest generating a laser beam having a wavelength in the ultraviolet range.

Lai discloses that the wavelength of the diode laser is selected to have a desirable penetration depth for effectively stimulating an acupuncture point. Lai column 2, lines 43-45. Any wavelength ranged from 500 nm to 1500 nm may be chosen for a variety of acupuncture treatments. Lai column 2, lines 49-51. The range of ultraviolet wavelengths is generally defined as less than 400 nm. Lai does not disclose a wavelength less than 500, and therefore Lai does not disclose ultraviolet wavelengths. The Examiner admits this on page 4 of the final office action dated November 10, 2005 : "Lai et al. is discussed above but does not disclose independent control of the lasers, ultraviolet wavelengths or beam shape." Further, Lai does not indicate that ultraviolet may be used to stimulate an acupuncture point. Therefore, Lai does not suggest using an ultraviolet wavelength.

Gerdes discloses exposing tissue to converging beams of treatment (infrared) radiation having a wavelength of between approximately 900 nm and 1100 nm. Gerdes also discloses aiming (visible) radiation having a wavelength of between approximately 400 nm and 700 nm. Gerdes column 8, lines 53-55; column 9, lines 35-39; column 12, lines 53-60; and all claims. Gerdes does not disclose a wavelength less than 400 nm.

The Examiner alleges on page 5 of the final office action that Gerdes discloses 400 nm of ultraviolet light at column 9, line 38. Gerdes actually refers to

visible light at 400 nm, however. Specifically, the Gerdes cite reads in its entirety:

Additionally, each of the *visible* laser radiation sources 170 is also configured to emit radiation having a wavelength preferably between approximately 400 nm to approximately 700 nm, and more preferably between about 635 nm and about 640 nm.

Gerdes at column 9, lines 34-39 (emphasis added). Ultraviolet light is not visible light. Therefore, Gerdes does not suggest an ultraviolet wavelength.

Because each reference affirmatively discloses an operating range and does not disclose operations in the ultraviolet range and because neither the nature of the problem to be solved nor the teachings of Lai suggests the use of ultraviolet wavelengths, neither Lai nor Gerdes suggests using an ultraviolet wavelength. Lacking any suggestion or motivation for an ultraviolet wavelength, no *prima facie* case of obviousness has been made.

5. Claim 17 is Not Obvious in Light of Lai and Gerdes Because Neither Lai Nor Gerdes Suggests a Linear Spot Shape

Applicants' claim 17 requires one of the spot shapes to be substantially linear. Lai does not disclose any beam shape, as the examiner admits on page 4 of the final office action dated November 10, 2005. Examiner's quote, *supra* p. 27. Moreover, while Gerdes discloses that "a wide variety of feathered, diffused, Fresnel, traced, and other types of spread-out patterns are also suitable for use with the present invention," a line is not a "spread-out" spot shape. Instead, a linear spot shape is the antithesis of "spread-out." See Gerdes column 9, lines 45-49. Lacking any suggestion or motivation of a linear beam shape, no *prima facie* case of obviousness has been made.

6. Claim 19 is Not Obvious in Light of Lai and Gerdes Because Neither Lai Nor Gerdes Suggests a Plus-Sign Spot Shape

Applicants' claim 19 requires one of the spot shapes to be in the shape of a plus sign. Again, Lai does not disclose any beam shape, as the examiner admits on page 4 of the final office action dated November 10, 2005. Examiner's quote, *supra* p. 27. Also again, while Gerdes discloses that "a wide variety of feathered, diffused, Fresnel, traced, and other types of spread-out patterns are also suitable for use with the present invention," a plus sign is not a "spread-out" spot shape. Gerdes at column 9, lines 46-49. Lacking any suggestion or motivation of a plus-sign spot shape, no *prima facie* case of obviousness has been made.

7. Claim 21 is Not Obvious in Light of Lai and Gerdes Because Neither Lai Nor Gerdes Suggests Different Spot Shapes

Applicants' claim 21 requires the spot shape of a first laser beam to be different from a spot shape of a second laser beam; that is, the first and second beam shapes are different. Again, Lai does not disclose any beam shape, as the examiner admits on page 4 of the final office action dated November 10, 2005. *Id.* While Gerdes discloses that a "wide variety" of "spread-out" beam shapes can be used, Gerdes not indicate that the beam shapes emitted from the radiation sources can be different from each other. Lacking any suggestion or motivation of a linear beam shape, no *prima facie* case of obviousness has been made.

8. Claims 23-29 are Not Obvious in Light of Lai and Gerdes Because Lai Teaches Against Handheld Probes

Each of Applicants' claims 23-29 teaches probes that are handheld and freely moved by the user's hand. As explained in section VII (B)(1) above, however, the problem solved by Lai is how to relieve a practitioner from having to hold laser probes in his hands. Lai accomplishes this by providing laser diode modules that attach onto a patient's body during treatment using a self-adhesive holder. See Lai column 1, lines 38-39. Lai explains that "[i]t has an adhesive surface and allows to attach a diode laser module onto an acupuncture point of a body part *free of hand-holding*." Lai column 1, lines 46-48 (emphasis added). "The holding mechanism is particularly advantageous since it *eliminates the need for hand holding the laser module* and allows the therapist to perform other tasks. Lai column 2, lines 29-31, emphasis added. Therefore, Lai expressly teaches against probes that are hand-held.

Because it is improper to combine references when one reference teaches away from the combination, Lai and Gerdes cannot be combined, and no *prima facie* case of obviousness has been made.

9. Claims 23-29 are Not Obvious in Light of Lai and Gerdes Because Lai Teaches Against Moving Probes While Emitting Laser Beams

Each of Applicants' claims 23-29 teaches a first handheld probe "from which the first laser beam emits, the first handheld probe ... freely moved by the user's hand relative to the surface of the skin of a patient while emitting the first laser beam."

As explained in section VII (B)(2) above, the problem solved by Lai is how to relieve a practitioner from having to hold laser probes in his hands while they are emitting laser beams. Lai explains that:

[S]timulating five to ten acupuncture points are [sic] common and each takes typically five to thirty minutes. Thus, a therapist needs to point the laser beam to one acupuncture point then another for a long time. Obviously, using these devices is inconvenient and is time consuming.

Lai at column 1, lines 27-31. Lai goes on to teach the laser therapy device art how to eliminate having to hold lasers while they are emitting laser beams, thereby allowing the therapist to perform other tasks during treatment. See Lai column 1, lines 47-48; column 2, lines 25-30. Indeed all of Lai's claims specifically give the intended use of providing a laser diode module "without holding said respective diode laser module by a person's hand." See Lai column 3, lines 32-33; Lai column 4, lines 30. To make Lai's device with hand-held lasers would defeat the purpose of Lai's invention, and lead to a device that is inoperative under the basic principles under which Lai is designed to operate. Therefore, Lai expressly teaches against probes that are hand-held while emitting laser beams.

Because it is improper to combine references when one teaches away from the combination or renders the device inoperable for its intended purpose, Lai and Gerdes cannot be combined, and no *prima facie* case of obviousness has been made.

10. Claims 23-29 are Not Obvious in Light of Lai and Gerdes Because the Prior Art Teaches Against Freely Moving the Probes

The explicit purpose of Applicants' invention is to enable a practitioner to personally and freely treat different areas of a patient at the same time. Pending App.

Paragraphs [0006] and [0007]. Each of Applicants' claims 23-29 teach first and second handheld probes that are "freely moved by the user's hand relative to the surface of the skin of a patient while emitting the [first, second] laser beam." Gerdes and Lai each teach away from freely moving the probes, albeit for different reasons. It is improper to combine references when one teaches away from the combination or renders the device inoperable for its intended purpose. *In re Gordon*, 221 USPQ at 1127.

Gerdes teaches a device wherein the wands are positioned over the patient in such a manner that the radiation from the wands intersects within the body being treated. See Gerdes column 1, lines 9-12; column 4, lines 45-50 and 56-59. Logically, for the laser beams to intersect, the wands must be treating substantially the same areas of the patient. It would render Gerdes inoperable to modify it such that the laser beams treated different areas of a patient at the same time, because then the laser beams would not intersect. Thus, Gerdes teaches against the probes moving freely.

Lai teaches the use of a self-adhesive holder for each of the diode lasers to attach onto a patient's body. Lai column 1, lines 38-40. The self-adhesive holder is configured to securely hold the diode laser module and to maintain the laser beam at the acupuncture point. Lai column 2, lines 26-31. It would render Lai inoperable to modify it such that the laser modules moved freely because then they would not be maintained at the acupuncture point.

Because it is improper to combine references when one teaches away from the combination or renders the device inoperable for its intended purpose and because in this case, both prior art references teach away from moving the probes freely, Lai and Gerdes cannot be combined. Accordingly, no *prima facie* case of obviousness has been made.

11. Claim 29 is Not Obvious in Light of Lai and Gerdes Because Neither Lai Nor Gerdes Suggests Using Ultraviolet Laser Light

Applicants' claim 29 claims at least one laser energy source generating a laser beam having a wavelength in the ultraviolet range. Neither Lai nor Gerdes disclose or suggest generating a laser beam having a wavelength in the ultraviolet range.

Lai discloses that the wavelength of the diode laser is selected to have a desirable penetration depth for effectively stimulating an acupuncture point. Lai column 2, lines 43-45. Any wavelength ranged from 500 nm to 1500 nm may be chosen for a variety of acupuncture treatments. Lai column 2, lines 49-51. The range of ultraviolet wavelengths is generally defined as less than 400 nm. Lai does not disclose a wavelength less than 500, and therefore Lai does not disclose ultraviolet wavelengths, as the examiner admits on page 4 of the final office action dated November 10, 2005. Examiner's quote, *supra* p. 27. Further, Lai does not indicate that ultraviolet wavelengths may be used to stimulate an acupuncture point. Therefore, Lai does not suggest an ultraviolet wavelength.

Gerdes discloses exposing tissue to converging beams of treatment (infrared) radiation having a wavelength of between approximately 900 nm and 1100 nm. Gerdes also discloses aiming (visible) radiation having a wavelength of between approximately 400 nm and 700 nm. Gerdes column 8, lines 53-55; column 9, lines 35-39; column 12, lines 53-60; and all claims. Gerdes does not disclose a wavelength less than 400 nm.

The Examiner alleges on page 5 of the final office action that Gerdes discloses 400 nm of ultraviolet light at column 9, line 38. Gerdes actually refers to *visible* light at 400 nm however. Specifically, the Gerdes cite reads in its entirety:

Additionally, each of the *visible* laser radiation sources 170 is also configured to emit radiation having a wavelength preferably

between approximately 400 nm to approximately 700 nm, and more preferably between about 635 nm and about 640 nm.

Gerdes column 9, lines 34-39 (emphasis added). Ultraviolet light is not visible light.

Therefore, Gerdes does not suggest an ultraviolet wavelength.

Because each reference affirmatively discloses an operating range and does not disclose operations in the ultraviolet range and because neither the nature of the problem to be solved nor the teachings of Lai suggests the use of ultraviolet wavelengths, neither Lai nor Gerdes suggests using an ultraviolet wavelength. Lacking any suggestion or motivation for an ultraviolet wavelength, no *prima facie* case of obviousness has been made.

Conclusion

For one or more reasons above, Applicants have shown that Claims 3-7, 16-22, and 23-29 are not obvious under 35 USC 103(a) in light of Lai and Gerdes. Reversal of the rejections is respectfully requested.

**C. Claims 1-10, 13-14, 17, 18, 21, and 23-27 Cannot be Actually Rejected
for Double-Patenting Because Claims Are Not Yet Otherwise Allowable**

The Examiner has twice actually rejected claims 1-10, 13-14, 17, 18, 21, and 23-27 for being obvious under the non-statutory (judicially-created doctrine of) double patenting as being unpatentable over claims 1-11 and 13 of U.S. Patent 6,746,473 issued to Shanks and Tucek. However, none of these claims has yet been allowed, and therefore no actual double-patenting can be determined. Heretofore Applicant has stated that upon a notice of allowance, and assuming such terminal disclaimer is still required, Applicants will file a terminal disclaimer and an assignment fully complying with 37 CFR § 1.321 and 37 CFR § 3.73.

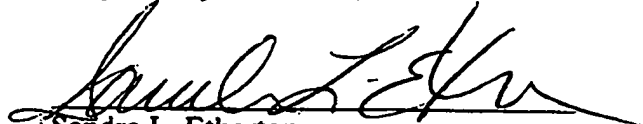
Applicants have shown that Claims 1-10, 13-14, 17, 18, 21, and 23-27 cannot be actually rejected for double-patenting and reversal of the rejection is respectfully requested.

VIII. Conclusion

Applicants believe they have shown that none of the Examiner's rejections in the pending application should be sustained. Applicants respectfully request that the Board reverse all the Examiner's rejections and allow the case to proceed to issuance.

Date: 8/2/06

Respectfully submitted,



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Claims Appendix

1. A multi-probe device comprising:
 - a) two or more laser energy sources, each generating one or more laser beams;
 - b) two or more handheld probes from which the laser beams emit, wherein:
 - i. each of the handheld probes houses one or more laser energy sources therewithin;
 - ii. each of the handheld probes emits one or more laser beams, and each of the handheld probes is not connected to a support structure while being freely moved by a user's hand relative to the surface of the skin of a patient; and
 - c) an optical arrangement attached to each handheld probe for receiving one or more laser beams and for transforming each of the laser beams into a desired spot shape.
2. A device according to claim 1 wherein at least two of the laser beams are emitted simultaneously and impinge two different parts of a patient's body.
3. A device according to claim 1 further comprising one or more control circuits for independently controlling each of the generated laser beams.

Reference R-4

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Applicants: SHANKS, Steven C. and TUCEK, Kevin B.

Title of Invention: Multi-Probe Device

Filed: July 1, 2003

Serial Number: 10/612,504

Atty Docket No.: 206-038

Examiner: Henry M. Johnson, III

Art Unit: 3739

CERTIFICATE OF EXPRESS MAILING

I hereby certify that the following correspondence is being deposited with the United States Postal Service as EXPRESS MAIL, postage paid, in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on

Date

3/5/07

Sandra L. Eberton

Express Mail Number: EQ 984 544-281 US

SUPPLEMENTAL APPEAL BRIEF

Mail Stop Appeal Brief
Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

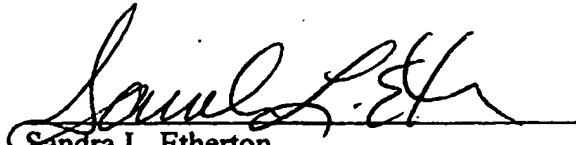
Dear Sir:

A Notice of Appeal/Request for Reinstatement of Appeal was filed January 29, 2007 which subsequently requires an appeal brief to be filed within two months. This Appeal Brief is timely submitted within two months of the Request for Reinstatement of Appeal. Applicants believe no fees are due.

The following documents are enclosed:

- Supplemental Appeal brief (35 sheets)
- Claims Appendix (6 sheets)
- Appendix E-1 (4 sheets including cover)
- Appendix RP (15 sheets including cover)
- Appendix R-1 (18 sheets including cover)

- Appendix R-2 (7 sheets)
- Appendix R-3 (19 sheets)
- Appendix R-4 (8 sheets)
- Appendix R-5 (46 sheets)
- Appendix R-6 (16 sheets)



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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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SUPPLEMENTAL APPEAL BRIEF

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VII. Argument

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Claims Appendix

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Appendix E-1 – Definition of “focus”

Related Proceedings Appendix

Appendix RP-1 – Order Construing Patent Claim Terms of US Patent 6,746,473.

References Cited Appendix

Appendices R-1 – R-6

Cases Cited

In re Fulton, 391 F. 3d 1195, 73 USPQ2d 1141 (Fed. Cir. 2004)

In re Geiger, 815 F.2d 686, 688, 2 USPQ2d 1276, 1278 (Fed. Cir. 1987)

In re Gordon, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)

Graham v. John Deere, 383 U.S. 1, 148 USPQ 459 (1966)

In re Grasselli, 218 USPQ 769 (Fed. Cir. 1983)

Hansgird v. Kemmer, 40 USPQ 665 (CCPA 1939)

In re King, 231 USPQ 136 (Fed. Cir. 1986)

In re Oelrich and Divigard, 212 USPQ 323 (CCPA 1981)

In re Oeticker, 977, F.2d 1443, 24 USPQ2d 1443, 1446 (Fed. Cir. 1992)

In re Ratti, 123 USPQ 349 (CCPA 1959)

In re Rijckaert, 28 USPQ2nd 1955 (Fed. Cir. 1993)

In re Rouffet, 149 F.3d 1350, 47 USPQ2d 1453 (Fed. Cir. 1998)

MEHL/Biophile Int'l Corp. v. Milgraum, 52 USPQ2d 1303 (Fed. Cir. 1999)

Verdegaal Brothers, Inc. v. Union Oil Company of California, 2 USPQ2d 1051 (Fed. Cir. 1987)

List of References

- R-1** Applicants' Specification and Drawings of U.S. Patent Application No. 10/612,504, as amended (referred to herein as the "Pending App.")
- R-2** U.S. Patent 6,074,411 issued to Lai (referred to herein as "Lai")
- R-3** U.S. Patent 6,267,779 issued to Gerdes (referred to herein as "Gerdes")
- R-4** Office action dated November 10, 2005
- R-5** Appeal Brief dated August 2, 2006
- R-6** U.S. patent 5,653,706 issued to Zavislan (referred to herein as "Zavislan")

Copies of the references above are included in the References Cited Appendix

Manual of Patent Examining Procedure, Eighth Edition, August 2001, Rev. 4 October 2005

MPEP §2112.02

MPEP §2141.01(a)

MPEP §2142

MPEP §2143.01

MPEP §2146

I. Real Party in Interest

The real parties in interest are the inventors, Steven C. Shanks and Kevin B. Tucek.

Appellants note that, in the event a terminal disclaimer is required to avoid a double-patenting type obviousness rejection, upon a notice of allowance and assuming such terminal disclaimer is still required, Applicants will file a terminal disclaimer and an assignment fully complying with 37 CFR § 1.321 and 37 CFR § 3.73. In such case, the real parties in interest will now include Therapy Products, Inc. dba Erchonia Medical (formed as a result of the merger between Therapy Products, Inc. and Erchonia Medical, Inc), owned in the majority by the inventors.

II. Related Appeals and Interferences

No appeals or interferences are pending which may be related to, directly affect, be directly affected by, or have a bearing on the Board's decision in the pending appeal, however the following are, or were, copending patent applications or litigation related to the application on appeal:

Type	Application or Patent Number	How Related to Application on Appeal	Atty Docket Number
US Patent	6,605,079	this patent claims the benefit of common priority application U.S. Provisional Application No. 60/273,282	206-001
US Patent	09/932,907 now U.S. Pat. No 6,746,473	this application claims the benefit of common priority application U.S. Provisional Application No. 60/273,282	206-002
PCT Application	PCT/US2002/019359	PCT application, and national stage applications and issued patents therefrom, claim the benefit of the common priority application US Pat. Application No. 09/932,907, now U.S. Pat. No 6,746,473, which claims the benefit of common priority application U.S. Provisional Application No. 60/273,282	206-021
CIP of related application	10/772,973	this application claims the benefit of common priority application U.S. Application No. 09/932,907, now U.S. Pat. No 6,746,473, which claims the benefit of U.S. Provisional Application No. 60/273,282	206-024
CIP of related application	10/772,738	this patent application claims the benefit of common priority application U.S. Application No.	206-032

		09/932,907, now U.S. Pat. No 6,746,473, which claims the benefit of U.S. Provisional Application No. 60/273,282	
judicial proceeding in Federal District Court of Colorado*	04-MK-1769 (CBS)	litigation alleging infringement of U.S. Pat. No 6,746,473 and invalidity thereof, et alia. U.S. Pat. No 6,746,473, which claims the benefit of U.S. Provisional Application No. 60/273,282	206-066
CIP of Patent Application on appeal	11/443980	this application claims the benefit of the application on appeal, which claims benefit of the common priority application 09/932,907, now U.S. Pat. No 6,746,473, which claims the benefit of U.S. Provisional Application No. 60/273,282	206-071
DIV of Patent Application on appeal	11/431257	this application claims the benefit of the application on appeal, which claims benefit of the common priority application 09/932,907, now U.S. Pat. No 6,746,473, which claims the benefit of U.S. Provisional Application No. 60/273,282	206-133

* A Markman hearing was held in Colorado District Court action 04-MK-1769 (CBS) to construe certain claims of U.S. Patent No. 6,746,473, which claims the benefit of common priority application 09/932,907, now U.S. Pat. No. 6,746,473. That decision is attached in the Related Proceedings Appendix as Appendix RP-1. No other decisions have been rendered by a court or the Board in any proceeding identified under this section.

III. Status of the Claims

Claims 1-10, 13-30, and 32 of U.S. Patent Application No. 10/612,504 are pending and stand rejected twice and constitute the subject matter of this appeal. Claims 11-12, 31, 33 -34 have been cancelled. Claims 35-39 were withdrawn by the Examiner.

IV. Status of Amendments

Applicants proposed amendments subsequent to the final office action dated November 10, 2005. Those amendments were considered, but not entered, by the Examiner.

Claim amendments made in response to an office action dated June 3, 2005 were entered by the Examiner in an office action dated November 10, 2005. Those amended claims constitute the subject matter of this appeal and appear in the Claims Appendix.

V. Summary of Claimed Subject Matter

In U.S. Patent Application No. 10/612,504, the Applicants present a single laser device that enables a practitioner to personally and freely treat different areas of a patient at the same time. Pending App. paragraphs [0005], [0006], [0007] and [0024] and Fig. 7. This is an improvement over prior art because earlier devices could not freely treat different areas of a patient at the same time.

The claimed device also enables a practitioner to personally and freely treat a patient using multiple laser beam emissions each with a specific spot shape, such as a line. Pending App. paragraphs [0018], lines 1-3. This has the advantage of enabling the practitioner to more precisely define the surface area the laser impinges upon. A copy of Applicants' specification, as amended, and drawings are enclosed for easy reference as Appendix R-1. The claims on appeal are listed in the Claims Appendix.

A. Independent Claim 1

Claim 1 defines a device (Pending App. paragraph [0015], line 1) having two or more handheld probes (Pending App. paragraph [0015], line 4). Each of the probes houses one or more laser energy sources (Pending App. paragraph [0016], lines 1-3) and each laser energy source produces a laser beam that is shown through an optical arrangement to produce a desired spot shape (Pending App. paragraph 0017, lines 1-3). Each probe is moved freely by the user while the laser beams are being emitted (Pending App. paragraphs [0015] and [0024]; Fig. 7).

B. Independent Claim 23

Claim 23 generally defines the same device as claim 1, except that it specifies that the laser energy sources must be semiconductor laser diodes and adds a control circuit for controlling the laser beams. Specifically, Claim 23 covers a laser device (Pending App. paragraph [0015], line 1) having first and second handheld probes (Pending App. paragraph [0015], line 4). Each of the probes has a semiconductor diode (Pending App. paragraph [0022], lines 3-7) laser energy source (Pending App. paragraph [0016], lines 1-3), and each laser energy source produces a laser beam that is shown through an optical arrangement to produce a desired spot shape (Pending App. paragraph [0017], lines 1-3). There is a control circuit for independently controlling each of the laser beams (Pending App. paragraph [0020], lines 1-9). Each probe is freely moved by the user's hand relative to the surface of the skin of a patient while emitting the first laser beam (Pending App. Paragraphs [0015] and [0024]; Fig. 7).

C. Independent Claim 30

Claim 30 generally defines the same device as claim 1 except that it specifies that each laser beam emits a different wavelength of visible light. Specifically, Claim 30 covers a device having two or more laser energy sources (Pending App. paragraph [0016], lines 1-3) housed in two or more handheld probes (Pending App. paragraph [0015], line 4). Each laser beam emits a visible wavelength (Pending App. paragraph [0022], lines 2-8) shown through an optical arrangement to produce a desired spot shape (Pending App. paragraph [0017], lines 1-3). Each probe can be moved freely by the user while the laser beams are being emitted (Pending App. Paragraphs [0015] and [0024]; Fig. 7).

None of the claims on appeal recite means-plus-function limitations.

VI. Grounds of Rejection to be Reviewed on Appeal

- A. Are Claims 1, 2, 8-10, 13-15, 22, 30 and 32 unpatentable under 35 USC 102(b) as being anticipated by U.S. Patent 6,074,411 issued to Lai?**
- B. Are Claims 3-7, 16-22, and 23-29 unpatentable under 35 USC 103(a) as being obvious in light U.S. Patent 6,074,411 issued to Lai in view of U.S. Patent 6,267,779 issued to Gerdes?**
- C. Are Claims 1-10, 13-14, 17, 18, 21, and 23-27 unpatentable as double-patenting claims 1-11 and 13 of U.S. Patent 6,746,473 issued to Shanks and Tucek?**
- D. Are Claims 1-10, 13-30, and 32 unpatentable under 35 USC 103(a) as being obvious in light of U.S. Patent 6,267,779 issued to Gerdes in view of U.S. Patent 5,653,706 issued to Zavislan et al?**

VII. Argument

A. Lai Does Not Anticipate Applicants' Claims under 35 USC 102(b).

Appellants incorporate by reference their arguments presented in section VII.A. at pp. 15-22 of their original Appeal Brief, filed August 2, 2006 and attached hereto as Appendix R-5.

B. Applicants' Claims are Not Obvious Under 35 USC 103(a) in light of U.S. Patent 6,074,411 issued to Lai in view of U.S. Patent 6,267,779 issued to Gerdes.

Appellants incorporate by reference their arguments presented in section VII.B. at pp. 16-34 of their original Appeal Brief, filed August 2, 2006 and attached hereto as Appendix R-5.

C. Claims 1-10, 13-14, 17, 18, 21, and 23-27 Cannot be Actually Rejected for Double-Patenting Because Claims Are Not Yet Otherwise Allowable.

Appellants incorporate by reference their arguments presented in section VII.C. at p.35 of their original Appeal Brief, filed August 2, 2006 and attached hereto as Appendix R-5.

D. Applicant's Claims are Not Obvious Under 35 USC 103(a) in light of U.S. Patent 6,267,779 issued to Gerdes in view of U.S. Patent 5,653,706 issued to Zavislan et al.

Legal Standard for Obviousness

In order to determine whether an invention is obvious in light of prior art, the Patent Office should make several basic factual inquiries, including the scope and content of the prior art. *Graham v. John Deere*, 383 U.S. 1, 148 USPQ 459 (1966). The scope of the prior art should include only analogous prior art. MPEP §2141.01(a). In general, in order for a reference to be considered analogous prior art, the reference must either be in

the field of applicant's endeavor or, if not, be reasonably pertinent to the particular problem with which the inventor was concerned. *In re Oeticker*, 977 F.2d 1443, 24 USPQ2d 1443, 1446 (Fed. Cir. 1992). Moreover, it is also necessary that a person of ordinary skill, seeking to solve a particular problem, would reasonably be expected or motivated to look to the allegedly analogous technology. *Id.*, 24 USPQ2d at 1446.

In addition to limiting prior art to only analogous art, to establish *a prima facie* case of obviousness, there also must be some suggestion or motivation to modify the reference or combine the teachings. MPEP §2142; *In re Rouffet*, 149 F.3d 1350, 1356, 47 USPQ2d 1453, 1456 (Fed. Cir. 1998); *In re Geiger*, 815 F.2d 686, 688, 2 USPQ2d 1276, 1278 (Fed. Cir. 1987). The references must be considered as a whole, and there must be something in the prior art as a whole to suggest the desirability of the combination. MPEP §2142; *In re Fulton*, 391 F.3d 1195, 73 USPQ2d 1141 (Fed. Cir. 2004). Moreover, it is improper to combine references when one teaches away from the combination or renders the device inoperable for its intended purpose. *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). *See also* MPEP §2146; *In re Grasselli*, 218 USPQ 769, 779 (Fed. Cir. 1983); *In re Ratti*, 123 USPQ 349, 352, CCPA 1959.

1. Claims 1-10 and 13-22 are not obvious in light of Gerdes and Zavislan because Zavislan is non-analogous art.

Each of Applicants' claims 1-10 and 13-22 are directed at low-power therapeutic handheld laser probes that are freely moved by a user's hands for healing purposes. While Zavislan teaches a single handheld laser device, it teaches one in an entirely different field and solving an unrelated problem. It is well-settled law that it is improper to consider a reference that is non-analogous. *In re Oeticker*, 24 USPQ2d at 1446.

Applicant's invention is a handheld multi-probe non-ablative laser device for wound healing, edema reduction, pain relief, inflammation reduction, and other similar applications. Pending App. Paragraph [0003], lines 2-6. It uses low-level laser energy and causes no immediate detectable temperature rise and no macroscopically visible changes in tissue structure. Pending App. Paragraph [0004], lines 2-4. The treated and surrounding tissue is neither heated nor damaged. *Id.* Additionally, because no damage occurs where the laser beam is applied, more than one laser can be applied simultaneously for faster and improved therapy. Pending App. Paragraph [0005], lines 1-6.

Zavislan discloses a high-power laser for microsurgical treatments in dermatology. Zavislan, column 1, lines 8-11. Zavislan's laser device uses thermolysis (from thermo- meaning heat and -lysis meaning break down), which is defined as a decomposition or dissociation of chemical compounds by use of heat. Zavislan's laser device is ablative, causing destruction of spider veins, hair follicles, and adhesions between tendons and their surrounding sheath. Zavislan, column 1, lines 30-35. A laser treatment with the device disclosed in Zavislan necessarily causes a rise in temperature and changes in tissue structure to accomplish necrosis and cauterization. *Id.* In addition, particular attention to visualizing where the laser beam is applied is critical according to Zavislan so that the operator does not damage areas where no treatment is desired. Zavislan, column 2, lines 16-18.

Because therapeutic lasers and surgical lasers result in dramatically different results on a patient's body, they must be designed considering different parameters and

safety concerns. Accordingly, high-power single-probe ablative lasers requiring precise aiming are not in the same field of endeavor as multi-probe low-energy therapeutic laser therapy devices.

Additionally, Applicants' invention solves the problem of how to apply multiple low-level laser beams to a patient simultaneously and with freely movable handheld probes. Zavislan's invention does not teach or suggest any solutions because it cannot operate safely or successfully if expanded to multiple handheld probes. Ablative lasers require the operator to pay particular attention to aiming the laser beam at a single tiny treatment area, making it physically impossible to apply more than one ablative laser beam at a time. Otherwise, the operator would inadvertently damage areas not intended to be treated with a first laser while attending to the desired treatment area of a second laser. Only in the movies can a human aim and fire two laser weapons simultaneously at two different microscopic targets and hit them. It would not be reasonable for Applicants to consider destructive technology that is incapable of supporting multi-probe devices when designing a therapeutic multi-probe device.

Because Zavislan involves different types of lasers and because a low-level laser device designer would not look to high-power ablative lasers when designing a multi-probe device, Zavislan is non-analogous art. Accordingly, no *prima facie* case of obviousness has been established.

2. **Claims 1-10 and 13-22 are not obvious in light of Gerdes and Zavislan because Zavislan teaches away from using more than one handheld probe.**

Each of Applicants' claims 1-10 and 13-22 teaches a device comprising two or more handheld laser probes. Although Gerdes teaches multiple handheld wands,

Zavislan teaches away from multiple wands. It is well-settled law that it is improper to combine references when one teaches away from the combination or renders the device inoperable for its intended purpose. *In re Gordon*, 221 USPQ at 1127.

Zavislan discloses a high power laser for microsurgical treatments in dermatology. Zavislan, column 1, lines 8-11. Zavislan's laser device is ablative, causing destruction of spider veins, hair follicles, and adhesions between tendons and their surrounding sheath. Zavislan, column 1, lines 24-30. Because Zavislan's device causes temperature changes and structural changes in tissue, particular attention to visualizing where the laser beam is applied is critical. As stated in Zavislan:

It is the principal object of the present invention to provide an improved system for laser assisted microsurgical ... treatments in which the treatment area can be visualized while the laser beam is being located at sites in the area where treatment is desired.

Zavislan, column 2, lines 14-18. It would be impractical, possibly even dangerous, to attempt to apply multiple ablative laser beams simultaneously. Zavislan teaches a device specifically designed to allow the operator to visually aim the laser beam. Zavislan's ablative laser device will fail if it is expanded to multiple handheld probes, especially where they treat different areas simultaneously.

Accordingly, Zavislan teaches away from using multiple handheld laser probes. Because references cannot be combined where one reference teaches away from the combination, Zavislan and Gerdes cannot be combined. No *prima facie* case of obviousness has been established.

3. Claims 1-10 and 13-22 are not obvious in light of Gerdes and Zavislan because the prior art teaches against freely moving the probes.

The explicit purpose of Applicants' invention is to enable a practitioner to personally and freely treat different areas of a patient at the same time. Pending App. Paragraphs [0006] and [0007]. Each of Applicants' claims 1-10 and 13-22 teach handheld probes that "emit one or more laser beams ... while being freely moved by a user's hand relative to the surface of the skin of a patient." Gerdes and Zavislan each teach away from freely moving the probes, albeit for different reasons. It is improper to combine references when one teaches away from the combination or renders the device inoperable for its intended purpose. *In re Gordon*, 221 USPQ at 1127.

Gerdes teaches a device wherein the wands are positioned over the patient in such a manner that the radiation from the wands intersects within the body being treated. See Gerdes column 1, lines 9-12; column 4, lines 45-50 and 56-59. Logically for the laser beams to intersect, the wands must be treating the same area of the patient. It would render Gerdes inoperable to modify it such that the laser beams treated different areas of a patient at the same time because then the laser beams would not intersect. Thus, Gerdes teaches against the probes moving freely.

As explained above, Zavislan teaches a device wherein the wand is visually positioned over a treatment area where microsurgery is desired. Because Zavislan's laser device is ablative, causing destruction of spider veins, hair follicles, and adhesions between tendons and their surrounding sheath, it is critical to aim the laser beam accurately. Zavislan, column 1, lines 24-30 and column 2, lines 14-18. It would be

impractical, possibly even dangerous, to freely move one or more ablative laser beams during treatment.

Because it is improper to combine references when one teaches away from the combination or renders the device inoperable for its intended purpose, and because in this case both prior art references teach away from moving the probes freely, Gerdes and Zavislan cannot be combined. Accordingly, no *prima facie* case of obviousness has been made.

4. **Claim 2 is not obvious in light of Gerdes and Zavislan because the prior art teaches against emitting two laser beams simultaneously and impinging two different parts of a patient's body.**

Applicants' Claim 2 requires that "at least two of the laser beams are emitted simultaneously and impinge two different parts of a patient's body." As detailed earlier, Applicants' intend that their invention enable a practitioner to personally and freely treat different areas of a patient at the same time. Pending App. Paragraphs [0006] and [0007]. Gerdes and Zavislan each teach away from simultaneously treating two different parts of a patient's body, albeit for different reasons. It is improper to combine references when one teaches away from the combination or renders the device inoperable for its intended purpose. *In re Gordon*, 221 USPQ at 1127.

Again, Gerdes teaches a device wherein the wands are positioned over the patient in such a manner that the radiation from the wands intersects within the body being treated. See Gerdes column 1, lines 9-12; column 4, lines 45-50 and 56-59. Logically for the laser beams to intersect, the wands must be treating the same area of the patient. It would render Gerdes inoperable to modify it such that two laser beams simultaneously

treat different areas of a patient because then the laser beams would not intersect. Thus, Gerdes teaches against the probes simultaneously treating two different areas of a patient's body.

Again, Zavislan teaches a device wherein the wand is visually positioned over a treatment area where microsurgery is desired. Because Zavislan's laser device is ablative, causing destruction of spider veins, hair follicles, and adhesions between tendons and their surrounding sheath, it is critical to visually aim the laser beam accurately. Zavislan, column 1, lines 24-30 and column 2, lines 14-18. It would render Zavislan inoperable to modify it such that two ablative laser beams treat two different areas simultaneously because then the operator could not visually aim the laser beams. Thus, Zavislan teaches against the probes simultaneously treating two different areas of a patient's body.

Because it is improper to combine references when one teaches away from the combination or renders the device inoperable for its intended purpose, and because in this case both prior art references teach away from simultaneously treating two different parts of the body with two laser beams, Gerdes and Zavislan cannot be combined.

Accordingly, no *prima facie* case of obviousness has been made.

5. **Claim 16 is not obvious in light of Gerdes and Zavislan because neither Gerdes nor Zavislan suggests using ultraviolet laser light.**

Applicants' claim 16 claims at least one laser energy source generating a laser beam having a wavelength in the ultraviolet range. Ultraviolet light ranges from about 4 nm to 380 nm, just beyond violet in the visible spectrum of light. Neither Gerdes nor

Zavislan disclose or suggest generating a laser beam having a wavelength in the ultraviolet range.

Zavislan discloses exposing tissue to laser beams having a wavelength from 700 to 1300 nm. Zavislan, column 3, lines 57-60. Zavislan does not disclose or suggest a wavelength of less than 700 nm.

Gerdes discloses exposing tissue to converging beams of treatment (infrared) radiation having a wavelength of between approximately 900 nm and 1100 nm. Gerdes also discloses aiming (visible) radiation having a wavelength of between approximately 400 nm and 700 nm. Gerdes, column 8, lines 53-55; column 9, lines 35-39; column 12, lines 53-60; and all claims. Gerdes does not disclose a wavelength of less than 400 nm.

The Examiner alleges on page 4 of his September 28th, 2006 office action that Gerdes discloses 400nm of ultraviolet light at col. 9, line 38. Gerdes actually refers to *visible* light at 400 nm, however. Specifically, the Gerdes cite reads in its entirety:

Additionally, each of the *visible* laser radiation sources 170 is also configured to emit radiation having a wavelength preferably between approximately 400 nm to approximately 700 nm, and more preferably between about 635 nm and about 640 nm.

Gerdes at column 9, lines 34-39 (emphasis added). Ultraviolet light is not visible light. Therefore, Gerdes does not suggest an ultraviolet wavelength.

Because each reference affirmatively discloses an operating range and does not disclose operations in the ultraviolet range and because neither the nature of the problem to be solved nor the teachings of Zavislan suggests the use of ultraviolet wavelengths, neither Zavislan nor Gerdes suggests using an ultraviolet wavelength. Lacking any

suggestion or motivation for an ultraviolet wavelength, no *prima facie* case of obviousness has been made.

6. **Claim 17 is not obvious in light of Gerdes and Zavislan because neither Gerdes nor Zavislan suggests a linear spot shape.**

Applicants' claim 17 requires one of the spot shapes to be substantially linear. Zavislan does not disclose any particular beam shapes. Moreover, while Gerdes discloses that "a wide variety of feathered, diffused, Fresnel, traced, and other types of spread-out patterns are also suitable for use with the present invention," a line is not a "spread-out" spot shape in the same sense. See Gerdes, column 9, lines 45-49. The light of Gerdes's "spread out patterns" travel in all directions in the plane of the treatment surface. A linear spot shape, however, is not "spread out" because it travels in only one direction in the plane of the treatment surface, namely along the length of the line. Therefore, Gerdes does not disclose or suggest a line. Lacking any suggestion or motivation of a linear beam shape, no *prima facie* case of obviousness has been made.

7. **Claim 19 is not obvious in light of Gerdes and Zavislan because neither Gerdes nor Zavislan suggests a plus-sign spot shape.**

Applicants' claim 19 requires one of the spot shapes to be in the shape of a plus sign. Zavislan does not disclose any particular beam shapes. Moreover, while Gerdes discloses that "a wide variety of feathered, diffused, Fresnel, traced, and other types of spread-out patterns are also suitable for use with the present invention," a plus-sign is not a "spread-out" spot shape. See Gerdes, column 9, lines 45-49. Lacking any suggestion or motivation of a plus-sign spot shape, no *prima facie* case of obviousness has been made.

8. Claim 21 is not obvious in light of Gerdes and Zavislan because neither Gerdes nor Zavislan suggests different spot shapes.

Applicants' claim 21 requires that the spot shape of a first laser beam to be different from a spot shape of a second laser beam; that is, the first and second beam shapes are different. Again, Zavislan does not disclose any particular beam shapes. While Gerdes discloses that "a wide variety" of "spread-out" beam shapes can be used, Gerdes does not indicate that the beam shapes emitted from the radiation sources can be different from each other. See Gerdes, column 9, lines 45-49. Lacking any suggestion or motivation of two different beam shapes, no *prima facie* case of obviousness has been made.

9. Claims 23-29 are not obvious in light of Gerdes and Zavislan because Zavislan is non-analogous art.

Each of Applicants' claims 23-29 are directed at low-power healing handheld laser probes that are freely moved by a user's hands for healing purposes. While Zavislan teaches a single handheld laser device, it teaches one in an entirely different field and solving an unrelated problem. It is well-settled law that it is improper to consider a reference that is non-analogous. *In re Oeticker*, 24 USPQ2d at 1446.

Applicant's invention is a handheld multi-probe non-ablative laser device for wound healing, edema reduction, pain relief, inflammation reduction, and other similar applications. Pending App. Paragraph [0003], lines 2-6. It uses low-level laser energy and causes no immediate detectable temperature rise and no macroscopically visible changes in tissue structure. Pending App. Paragraph [0004], lines 2-4. The treated and surrounding tissue is neither heated nor damaged. *Id.* Additionally, because no damage occurs where the laser beam is applied, more than one laser can be applied

simultaneously for faster and improved therapy. Pending App. Paragraph [0005], lines 1-

6. Precise and accurate aiming of each probe is not critical to successful therapeutic results.

Zavislan discloses a high-power laser for microsurgical treatments in dermatology. Zavislan, column 1, lines 8-11. Zavislan's laser device is ablative, causing destruction of spider veins, hair follicles, and adhesions between tendons and their surrounding sheath. Zavislan, column 1, lines 24-30. A laser treatment with the device disclosed in Zavislan necessarily causes changes a rise in temperature and changes in tissue structure to accomplish necrosis and cauterization. *Id.* In addition, particular attention to visualizing where the laser beam is applied is critical according to Zavislan so that the operator does not damage areas where no treatment is desired. Zavislan, column 2, lines 16-18.

Because therapeutic lasers and surgical lasers result in dramatically different results on a patient's body, they must be designed considering different parameters and safety concerns. Accordingly, high-power single-probe ablative lasers requiring precise aiming are not in the same field of endeavor as multi-probe low-energy therapeutic laser therapy devices.

Additionally, Applicants' invention solves the problem of how to apply multiple low-level laser beams to a patient simultaneously and with freely movable handheld probes. Zavislan's invention does not teach or suggest any solutions because it cannot operate safely or successfully if expanded to multiple handheld probes. The arguments of Section VII.D.2 are incorporated herein. Ablative lasers require the operator to pay particular attention to aiming the laser beam accurately, making it impossible to apply

more than one ablative laser beam at a time. It would not be reasonable for Applicants to consider destructive technology incapable of supporting multi-probe devices when designing a multi-probe therapeutic device.

Because Zavislan involves different types of lasers and because a low-level laser device designer would not look to high-power ablative lasers when designing a multi-probe device, Zavislan is non-analogous art. Accordingly, no *prima facie* case of obviousness has been established.

10. Claims 23-29 are not obvious in light of Gerdes and Zavislan because Zavislan teaches away from using more than one handheld probe.

Each of Applicants' claims 23-29 teaches a device comprising two or more handheld laser probes. Although Zavislan teaches multiple handheld wands, Zavislan teaches away from multiple wands. It is well-settled law that it is improper to combine references when one teaches away from the combination or renders the device inoperable for its intended purpose. *In re Gordon*, 221 USPQ at 1127.

Zavislan discloses a high power laser for microsurgical treatments in dermatology. Zavislan, column 1, lines 8-11. Zavislan's laser device is ablative, causing destruction of spider veins, hair follicles, and adhesions between tendons and their surrounding sheath. Zavislan, column 1, lines 24-30. Because Zavislan's device causes temperature changes and structural changes in tissue, particular attention to visualizing where the laser beam is applied is critical. As stated in Zavislan:

It is the principal object of the present invention to provide an improved system for laser assisted microsurgical ... treatments in which the treatment area can be visualized while the laser beam is being located at sites in the area where treatment is desired.

Zavislan, column 2, lines 14-18. It would be impractical, possibly even dangerous, to attempt to apply multiple ablative laser beams simultaneously. Zavislan teaches a device specifically designed to allow the operator to visually aim the laser beam. Zavislan's ablative laser device will fail if it is expanded to multiple handheld probes, especially where they treat different areas simultaneously.

Accordingly, Zavislan teaches away from using multiple handheld laser probes. Because references cannot be combined where one reference teaches away from the combination, Zavislan and Gerdes cannot be combined. No *prima facie* case of obviousness has been established.

11. Claims 23-29 are not obvious in light of Gerdes and Zavislan because the prior art teaches against freely moving the probes.

The explicit purpose of Applicants' invention is to enable a practitioner to personally and freely treat different areas of a patient at the same time. Pending App. Paragraphs [0006] and [0007]. Each of Applicants' claims 23-29 teach handheld probes that "emit one or more laser beams ... while being freely moved by a user's hand relative to the surface of the skin of a patient." Gerdes and Zavislan each teach away from freely moving the probes, albeit for different reasons. It is improper to combine references when one teaches away from the combination or renders the device inoperable for its intended purpose. *In re Gordon*, 221 USPQ at 1127.

Gerdes teaches a device wherein the wands are positioned over the patient in such a manner that the radiation from the wands intersects within the body being treated. See Gerdes column 1, lines 9-12; column 4, lines 45-50 and 56-59. Logically for the laser beams to intersect, the wands must be treating the same area of the patient. It would

render Gerdes inoperable to modify it such that the laser beams treated different areas of a patient at the same time because then the laser beams would not intersect. Thus, Gerdes teaches against the probes moving freely.

Zavislan teaches a device wherein the wand is visually positioned over a treatment area where microsurgery is desired. Because Zavislan's laser device is ablative, causing destruction of spider veins, hair follicles, and adhesions between tendons and their surrounding sheath, it is critical to aim the laser beam accurately. Zavislan, column 1, lines 24-30 and column 2, lines 14-18. It would be impractical, possibly even dangerous, to freely move multiple ablative laser beams during treatment.

Because it is improper to combine references when one teaches away from the combination or renders the device inoperable for its intended purpose, and because in this case both prior art references teach away from moving the probes freely, Gerdes and Zavislan cannot be combined. Accordingly, no *prima facie* case of obviousness has been made.

12. **Claim 29 is not obvious in light of Gerdes and Zavislan because neither Gerdes nor Zavislan suggests using ultraviolet laser light.**

Applicants' claim 29 claims at least one laser energy source generating a laser beam having a wavelength in the ultraviolet range. Ultraviolet light ranges from about 4 nm to 380 nm, just beyond violet in the visible spectrum of light. Neither Gerdes nor Zavislan disclose or suggest generating a laser beam having a wavelength in the ultraviolet range.

Zavislan discloses exposing tissue to laser beams having a wavelength from 700 to 1300 nm. Zavislan, column 3, lines 57-60. Zavislan does not disclose or suggest a wavelength of less than 700 nm.

Gerdes discloses exposing tissue to converging beams of treatment (infrared radiation having a wavelength of between approximately 900 nm and 1100 nm. Gerdes also discloses aiming (visible) radiation having a wavelength of between approximately 400 nm and 700 nm. Gerdes column 8, lines 53-55; column 9, lines 35-39; column 12, lines 53-60; and all claims. Gerdes does not disclose a wavelength of less than 400 nm.

The Examiner alleges on page 4 of his September 28, 2006 office action that Gerdes discloses 400nm of ultraviolet light at col. 9, line 38. Gerdes actually refers to *visible* light at 400 nm, however. Specifically, the Gerdes cite reads in its entirety:

Additionally, each of the *visible* laser radiation sources 170 is also configured to emit radiation having a wavelength preferably between approximately 400 nm to approximately 700 nm, and more preferably between about 635 nm and about 640 nm.

Gerdes at column 9, lines 34-39 (emphasis added). Ultraviolet light is not visible light. Therefore, Gerdes does not suggest an ultraviolet wavelength.

Because each reference affirmatively discloses an operating range and does not disclose operations in the ultraviolet range and because neither the nature of the problem to be solved nor the teachings of Zavislan suggests the use of ultraviolet wavelengths, neither Zavislan nor Gerdes suggests using an ultraviolet wavelength. Lacking any suggestion of motivation for an ultraviolet wavelength, no *prima facie* case of obviousness has been made.

13. Claims 30 and 32 are not obvious in light of Gerdes and Zavislan because Zavislan is non-analogous art.

Each of Applicants' claims 30 and 32 are directed at low-power healing handheld laser probes that are freely moved by a user's hands for healing purposes. While Zavislan teaches a single handheld laser device, it teaches one in an entirely different field and solving an unrelated problem. It is well-settled law that it is improper to consider a reference that is non-analogous. *In re Oeticker*, 24 USPQ2d at 1446.

Applicant's invention is a handheld multi-probe non-ablative laser device for wound healing, edema reduction, pain relief, inflammation reduction, and other similar applications. Pending App. Paragraph [0003], lines 2-6. It uses low-level laser energy and causes no immediate detectable temperature rise and no macroscopically visible changes in tissue structure. Pending App. Paragraph [0004], lines 2-4. The treated and surrounding tissue is neither heated nor damaged. *Id.* Additionally, because no damage occurs where the laser beam is applied, more than one laser can be applied simultaneously for faster and improved therapy. Pending App. Paragraph [0005], lines 1-6. Precise and accurate aiming of each probe is not critical to successful therapeutic results.

Zavislan discloses a high-power laser for microsurgical treatments in dermatology. Zavislan, column 1, lines 8-11. Zavislan's laser device is ablative, causing destruction of spider veins, hair follicles, and adhesions between tendons and their surrounding sheath. Zavislan, column 1, lines 24-30. A laser treatment with the device disclosed in Zavislan necessarily causes changes in tissue structure and temperature rises. In addition, particular attention to visualizing where the laser beam is applied is critical

according to Zavislan so that the operator does not damage areas where no treatment is desired. Zavislan, column 2, lines 16-18.

Because therapeutic lasers and surgical lasers result in dramatically different results on a patient's body, they must be designed considering different parameters and safety concerns. Accordingly, high-power single-probe ablative lasers requiring precise aiming are not in the same field of endeavor as multi-probe low-energy therapeutic laser therapy devices.

Additionally, Applicants' invention solves the problem of how to apply multiple low-level laser beams to a patient simultaneously and with freely movable handheld probes. Zavislan's invention does not teach or suggest any solutions because it cannot operate safely or successfully if expanded to multiple handheld probes. Ablative lasers require the operator to pay particular attention to aiming and focusing the laser beam accurately, making it impossible to apply more than one ablative laser beam at a time. It would not be reasonable for Applicants to consider technology incapable of supporting multi-probe devices when designing a therapeutic device for treating multiple areas simultaneously with non-ablative lasers.

Because Zavislan involves different types of lasers and because a low-level laser device designer would not look to high-power ablative lasers when designing a multi-probe device, Zavislan is non-analogous art. Accordingly, no *prima facie* case of obviousness has been established.

14. Claims 30 and 32 are not obvious in light of Gerdes and Zavislan because Zavislan teaches away from using more than one handheld probe.

Each of Applicants' claims 30 and 32 teaches a device comprising two or more handheld laser probes. Although Zavislan teaches multiple handheld wands, Zavislan teaches away from multiple wands. It is well-settled law that it is improper to combine references when one teaches away from the combination or renders the device inoperable for its intended purpose. *In re Gordon*, 221 USPQ at 1127.

Zavislan discloses a high power laser for microsurgical treatments in dermatology. Zavislan, column 1, lines 8-11. Zavislan's laser device is ablative, causing destruction of spider veins, hair follicles, and adhesions between tendons and their surrounding sheath. Zavislan, column 1, lines 24-30. Because Zavislan's device causes temperature changes and structural changes in tissue, particular attention to visualizing where the laser beam is applied is critical. As stated in Zavislan:

It is the principal object of the present invention to provide an improved system for laser assisted microsurgical ... treatments in which the treatment area can be visualized while the laser beam is being located at sites in the area where treatment is desired.

Zavislan, column 2, lines 14-18. It would be impractical, possibly even dangerous, to attempt to apply multiple ablative laser beams simultaneously. Zavislan teaches a device specifically designed to allow the operator to visually aim the laser beam. Zavislan's ablative laser device will fail if it is expanded to multiple handheld probes, especially where they treat different areas simultaneously.

Accordingly, Zavislan teaches away from using multiple handheld laser probes. Because references cannot be combined where one reference teaches away from the

combination, Zavislan and Gerdes cannot be combined. No *prima facie* case of obviousness has been established.

15. Claims 30 and 32 are not obvious in light of Gerdes and Zavislan because the prior art teaches against freely moving the probes.

The explicit purpose of Applicants' invention is to enable a practitioner to personally and freely treat different areas of a patient at the same time. Pending App. Paragraphs [0006] and [0007]. Each of Applicants' claims 30 and 32 teach handheld probes that "emit one or more laser beams ... while being freely moved by a user's hand relative to the surface of the skin of a patient." Gerdes and Zavislan each teach away from freely moving the probes, albeit for different reasons. It is improper to combine references when one teaches away from the combination or renders the device inoperable for its intended purpose. *In re Gordon*, 221 USPQ at 1127.

Gerdes teaches a device wherein the wands are positioned over the patient in such a manner that the radiation from the wands intersects within the body being treated. See Gerdes column 1, lines 9-12; column 4, lines 45-50 and 56-59. Logically for the laser beams to intersect, the wands must be treating substantially the same area of the patient. It would render Gerdes inoperable to modify it such that the laser beams treated different areas of a patient at the same time because then the laser beams would not intersect. Thus, Gerdes teaches against the probes moving freely.

Zavislan teaches a device wherein the wand is visually positioned over a treatment area where microsurgery is desired. Because Zavislan's laser device is ablative, causing destruction of spider veins, hair follicles, and adhesions between tendons and their surrounding sheath, it is critical to aim the laser beam accurately. Zavislan, column 1,

lines 24-30 and column 2, lines 14-18. It would be impractical, possibly even dangerous, to freely move one or more ablative laser beams during treatment.

Because it is improper to combine references when one teaches away from the combination or renders the device inoperable for its intended purpose, and because in this case both prior art references teach away from moving the probes freely, Gerdes and Zavislan cannot be combined. Accordingly, no *prima facie* case of obviousness has been made.

Conclusion


Applicants have shown that Claims 1-10, 13-30, and 32 are not obvious under 35 USC 103(a) in light of Gerdes and Zavislan for one or more reasons explained above. Reversal of the rejections is respectfully requested.

VIII. Conclusion

Applicants believe they have shown that none of the Examiner's rejections in the pending application should be sustained. Applicants respectfully request that the Board reverse all the Examiner's rejections and allow the case to proceed to issuance.

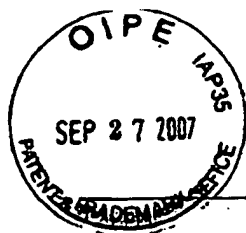
Date: 3/4/07

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Reference R-5



09/18/08

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Applicants: SHANKS, Steven C. and TUCEK, Kevin B.

Title of Invention: Multi-Probe Device

Filed: July 1, 2003

Serial Number: 10/612,504

Atty Docket No.: 206-038

Examiner: Henry M. Johnson, III

Art Unit: 3739

CERTIFICATE OF EXPRESS MAILING

I hereby certify that the following correspondence is being deposited with the United States Postal Service as EXPRESS MAIL, postage paid, in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on:

Date

9/27/07

Sandra L. Etherton

Express Mail Number: EB 377 404 835 US

SIGNED REVISED SUPPLEMENTAL APPEAL BRIEF

Mail Stop Appeal Brief
Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

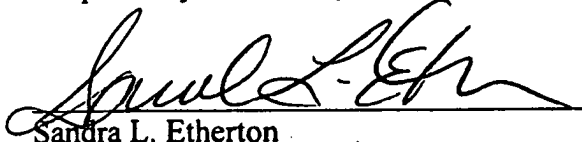
According to the Director in her September 14, 2007 DECISION ON PETITION UNDER 37 CFR 1.181, "[t]he Notification of Non-Compliant Appeal Brief issued on Jun. 5, 2007 is hereby withdrawn." Accordingly, Applicants' believe that their Supplemental Appeal Brief filed on March 5, 2007 is pending.

In an abundance of caution, while awaiting a communication from the examiner on the status of their March 5, 2007 Supplemental Appeal Brief, Applicants are submitting a signed Revised Supplemental Appeal Brief as requested by the examiner in his August 29, 2007 Notification of Non-Compliant Appeal Brief. This signed Revised Supplemental Appeal Brief is timely submitted within one month of the August 29, 2007 Notification of Non-Compliant Appeal Brief. Applicants believe no fees are due.

The following documents are enclosed:

- Revised Supplemental Appeal Brief, now signed (35 sheets)
- Claims Appendix (6 sheets)
- Appendix E-1 (4 sheets including cover)
- Appendix RP (15 sheets including cover)
- Appendix R-1 (18 sheets including cover)
- Appendix R-2 (7 sheets)
- Appendix R-3 (19 sheets)
- Appendix R-4 (8 sheets)
- Appendix R-5 (46 sheets)
- Appendix R-6 (16 sheets)

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Applicants: SHANKS, Steven C. and TUCEK, Kevin B.

Title of Invention: Multi-Probe Device

Filed: July 1, 2003

Serial Number: 10/612,504

Atty Docket No.: 206-038

Examiner: Henry M. Johnson, III

Art Unit: 3739

REVISED SUPPLEMENTAL APPEAL BRIEF

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VII. Argument

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Claims Appendix

Evidence Appendix

Appendix E-1 – Definition of “focus”

Related Proceedings Appendix

Appendix RP-1 – Order Construing Patent Claim Terms of US Patent 6,746,473.

References Cited Appendix

Appendices R-1 – R-6

Cases Cited

- In re Fulton*, 391 F. 3d 1195, 73 USPQ2d 1141 (Fed. Cir. 2004)
- In re Geiger*, 815 F.2d 686, 688, 2 USPQ2d 1276, 1278 (Fed. Cir. 1987)
- In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)
- Graham v. John Deere*, 383 U.S. 1, 148 USPQ 459 (1966)
- In re Grasselli*, 218 USPQ 769 (Fed. Cir. 1983)
- Hansgird v. Kemmer*, 40 USPQ 665 (CCPA 1939)
- In re King*, 231 USPQ 136 (Fed. Cir. 1986)
- In re Oelrich and Divigard*, 212 USPQ 323 (CCPA 1981)
- In re Oeticker*, 977, F.2d 1443, 24 USPQ2d 1443, 1446 (Fed. Cir. 1992)
- In re Ratti*, 123 USPQ 349 (CCPA 1959)
- In re Rijckaert*, 28 USPQ2nd 1955 (Fed. Cir. 1993)
- In re Rouffet*, 149 F.3d 1350, 47 USPQ2d 1453 (Fed. Cir. 1998)
- MEHL/Biophile Int'l Corp. v. Milgraum*, 52 USPQ2d 1303 (Fed. Cir. 1999)
- Verdegaal Brothers, Inc. v. Union Oil Company of California*, 2 USPQ2d 1051 (Fed. Cir. 1987)

List of References

- R-1** Applicants' Specification and Drawings of U.S. Patent Application No. 10/612,504, as amended (referred to herein as the "Pending App.")
- R-2** U.S. Patent 6,074,411 issued to Lai (referred to herein as "Lai")
- R-3** U.S. Patent 6,267,779 issued to Gerdes (referred to herein as "Gerdes")
- R-4** Office action dated November 10, 2005
- R-5** Appeal Brief dated August 2, 2006
- R-6** U.S. patent 5,653,706 issued to Zavislan (referred to herein as "Zavislan")

Copies of the references above are included in the References Cited Appendix

Manual of Patent Examining Procedure, Eighth Edition, August 2001, Rev. 4 October 2005

MPEP §2112.02

MPEP §2141.01(a)

MPEP §2142

MPEP §2143.01

MPEP §2146

I. Real Party in Interest

The real parties in interest are the inventors, Steven C. Shanks and Kevin B. Tucek.

Appellants note that, in the event a terminal disclaimer is required to avoid a double-patenting type obviousness rejection, upon a notice of allowance and assuming such terminal disclaimer is still required, Applicants will file a terminal disclaimer and an assignment fully complying with 37 CFR § 1.321 and 37 CFR § 3.73. In such case, the real parties in interest will now include Therapy Products, Inc. dba Erchonia Medical (formed as a result of the merger between Therapy Products, Inc. and Erchonia Medical, Inc), owned in the majority by the inventors.

II. Related Appeals and Interferences

No appeals or interferences are pending which may be related to, directly affect, be directly affected by, or have a bearing on the Board's decision in the pending appeal, however the following are, or were, copending patent applications or litigation related to the application on appeal:

Type	Application or Patent Number	How Related to Application on Appeal	Atty Docket Number
US Patent	6,605,079	this patent claims the benefit of common priority application U.S. Provisional Application No. 60/273,282	206-001
US Patent	09/932,907 now U.S. Pat. No 6,746,473	this application claims the benefit of common priority application U.S. Provisional Application No. 60/273,282	206-002
PCT Application	PCT/US2002/019359	PCT application, and national stage applications and issued patents therefrom, claim the benefit of the common priority application US Pat. Application No. 09/932,907, now U.S. Pat. No 6,746,473, which claims the benefit of common priority application U.S. Provisional Application No. 60/273,282	206-021
CIP of related application	10/772,973	this application claims the benefit of common priority application U.S. Application No. 09/932,907, now U.S. Pat. No 6,746,473, which claims the benefit of U.S. Provisional Application No. 60/273,282	206-024
CIP of related application	10/772,738	this patent application claims the benefit of common priority application U.S. Application No.	206-032

		09/932,907, now U.S. Pat. No 6,746,473, which claims the benefit of U.S. Provisional Application No. 60/273,282	
judicial proceeding in Federal District Court of Colorado*	04-MK-1769 (CBS)	litigation alleging infringement of U.S. Pat. No 6,746,473 and invalidity thereof, et alia. U.S. Pat. No 6,746,473, which claims the benefit of U.S. Provisional Application No. 60/273,282	206-066
CIP of Patent Application on appeal	11/443980	this application claims the benefit of the application on appeal, which claims benefit of the common priority application 09/932,907, now U.S. Pat. No 6,746,473, which claims the benefit of U.S. Provisional Application No. 60/273,282	206-071
DIV of Patent Application on appeal	11/431257	this application claims the benefit of the application on appeal, which claims benefit of the common priority application 09/932,907, now U.S. Pat. No 6,746,473, which claims the benefit of U.S. Provisional Application No. 60/273,282	206-133

* A Markman hearing was held in Colorado District Court action 04-MK-1769 (CBS) to construe certain claims of U.S. Patent No. 6,746,473, which claims the benefit of common priority application 09/932,907, now U.S. Pat. No. 6,746,473. That decision is attached in the Related Proceedings Appendix as Appendix RP-1. No other decisions have been rendered by a court or the Board in any proceeding identified under this section.

III. Status of the Claims

Claims 1-10, 13-30, and 32 of U.S. Patent Application No. 10/612,504 are pending and stand rejected twice and constitute the subject matter of this appeal. Claims 11-12, 31, 33 -34 have been cancelled. Claims 35-39 were withdrawn by the Examiner.

IV. Status of Amendments

Applicants proposed amendments subsequent to the final office action dated November 10, 2005. Those amendments were considered, but not entered, by the Examiner.

Claim amendments made in response to an office action dated June 3, 2005 were entered by the Examiner in an office action dated November 10, 2005. Those amended claims constitute the subject matter of this appeal and appear in the Claims Appendix.

V. Summary of Claimed Subject Matter

In U.S. Patent Application No. 10/612,504, the Applicants present a single laser device that enables a practitioner to personally and freely treat different areas of a patient at the same time. Pending App. paragraphs [0005], [0006], [0007] and [0024] and Fig. 7. This is an improvement over prior art because earlier devices could not freely treat different areas of a patient at the same time.

The claimed device also enables a practitioner to personally and freely treat a patient using multiple laser beam emissions each with a specific spot shape, such as a line. Pending App. paragraphs [0018], lines 1-3. This has the advantage of enabling the practitioner to more precisely define the surface area the laser impinges upon. A copy of Applicants' specification, as amended, and drawings are enclosed for easy reference as Appendix R-1. The claims on appeal are listed in the Claims Appendix.

A. Independent Claim 1

Claim 1 defines a device (Pending App. paragraph [0015], line 1) having two or more handheld probes (Pending App. paragraph [0015], line 4). Each of the probes houses one or more laser energy sources (Pending App. paragraph [0016], lines 1-3) and each laser energy source produces a laser beam that is shown through an optical arrangement to produce a desired spot shape (Pending App. paragraph 0017, lines 1-3). Each probe is moved freely by the user while the laser beams are being emitted (Pending App. paragraphs [0015] and [0024]; Fig. 7).

B. Independent Claim 23

Claim 23 generally defines the same device as claim 1, except that it specifies that the laser energy sources must be semiconductor laser diodes and adds a control circuit for controlling the laser beams. Specifically, Claim 23 covers a laser device (Pending App. paragraph [0015], line 1) having first and second handheld probes (Pending App. paragraph [0015], line 4). Each of the probes has a semiconductor diode (Pending App. paragraph [0022], lines 3-7) laser energy source (Pending App. paragraph [0016], lines 1-3), and each laser energy source produces a laser beam that is shown through an optical arrangement to produce a desired spot shape (Pending App. paragraph [0017], lines 1-3). There is a control circuit for independently controlling each of the laser beams (Pending App. paragraph [0020], lines 1-9). Each probe is freely moved by the user's hand relative to the surface of the skin of a patient while emitting the first laser beam (Pending App. Paragraphs [0015] and [0024]; Fig. 7).

C. Independent Claim 30

Claim 30 generally defines the same device as claim 1 except that it specifies that each laser beam emits a different wavelength of visible light. Specifically, Claim 30 covers a device having two or more laser energy sources (Pending App. paragraph [0016], lines 1-3) housed in two or more handheld probes (Pending App. paragraph [0015], line 4). Each laser beam emits a visible wavelength (Pending App. paragraph [0022], lines 2-8) shown through an optical arrangement to produce a desired spot shape (Pending App. paragraph [0017], lines 1-3). Each probe can be moved freely by the user while the laser beams are being emitted (Pending App. Paragraphs [0015] and [0024]; Fig. 7).

None of the claims on appeal recite means-plus-function limitations.

VI. Grounds of Rejection to be Reviewed on Appeal

- A. Are Claims 1, 2, 8-10, 13-15, 22, 30 and 32 unpatentable under 35 USC 102(b) as being anticipated by U.S. Patent 6,074,411 issued to Lai?**
- B. Are Claims 1-10, 13-14, 17, 18, 21, and 23-27 unpatentable as double-patenting claims 1-11 and 13 of U.S. Patent 6,746,473 issued to Shanks and Tucek?**
- C. Are Claims 1-10, 13-30, and 32 unpatentable under 35 USC 103(a) as being obvious in light of U.S. Patent 6,267,779 issued to Gerdes in view of U.S. Patent 5,653,706 issued to Zavislan et al?**

VII. Argument

A. Lai Does Not Anticipate Applicants' Claims under 35 USC 102(b).

Appellants incorporate by reference their arguments presented in section VII.A. at pp. 15-22 of their original Appeal Brief, filed August 2, 2006 and attached hereto as Appendix R-5.

B. Claims 1-10, 13-14, 17, 18, 21, and 23-27 Cannot be Actually Rejected for Double-Patenting Because Claims Are Not Yet Otherwise Allowable.

Appellants incorporate by reference their arguments presented in section VII.C. at p.35 of their original Appeal Brief, filed August 2, 2006 and attached hereto as Appendix R-5.

C. Applicant's Claims are Not Obvious Under 35 USC 103(a) in light of U.S. Patent 6,267,779 issued to Gerdes in view of U.S. Patent 5,653,706 issued to Zavislan et al.

Legal Standard for Obviousness

In order to determine whether an invention is obvious in light of prior art, the Patent Office should make several basic factual inquiries, including the scope and content of the prior art. *Graham v. John Deere*, 383 U.S. 1, 148 USPQ 459 (1966). The scope of the prior art should include only analogous prior art. MPEP §2141.01(a). In general, in order for a reference to be considered analogous prior art, the reference must either be in the field of applicant's endeavor or, if not, be reasonably pertinent to the particular problem with which the inventor was concerned. *In re Oeticker*, 977 F.2d 1443, 24 USPQ2d 1443, 1446 (Fed. Cir. 1992). Moreover, it is also necessary that a person of ordinary skill, seeking to solve a particular problem, would reasonably be expected or motivated to look to the allegedly analogous technology. *Id.*, 24 USPQ2d at 1446.

In addition to limiting prior art to only analogous art, to establish a *prima facie* case of obviousness, there also must be some suggestion or motivation to modify the reference or combine the teachings. MPEP §2142; *In re Rouffet*, 149 F.3d 1350, 1356, 47 USPQ2d 1453, 1456 (Fed. Cir. 1998); *In re Geiger*, 815 F.2d 686, 688, 2 USPQ2d 1276, 1278 (Fed. Cir. 1987). The references must be considered as a whole, and there must be something in the prior art as a whole to suggest the desirability of the combination. MPEP §2142; *In re Fulton*, 391 F.3d 1195, 73 USPQ2d 1141 (Fed. Cir. 2004). Moreover, it is improper to combine references when one teaches away from the combination or renders the device inoperable for its intended purpose. *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). See also MPEP §2146; *In re Grasselli*, 218 USPQ 769, 779 (Fed. Cir. 1983); *In re Ratti*, 123 USPQ 349, 352, CCPA 1959.

1. Claims 1-10 and 13-22 are not obvious in light of Gerdes and Zavislan because Zavislan is non-analogous art.

Each of Applicants' claims 1-10 and 13-22 are directed at low-power therapeutic handheld laser probes that are freely moved by a user's hands for healing purposes. While Zavislan teaches a single handheld laser device, it teaches one in an entirely different field and solving an unrelated problem. It is well-settled law that it is improper to consider a reference that is non-analogous. *In re Oeticker*, 24 USPQ2d at 1446.

Applicant's invention is a handheld multi-probe non-ablative laser device for wound healing, edema reduction, pain relief, inflammation reduction, and other similar applications. Pending App. Paragraph [0003], lines 2-6. It uses low-level laser energy and causes no immediate detectable temperature rise and no macroscopically visible

changes in tissue structure. Pending App. Paragraph [0004], lines 2-4. The treated and surrounding tissue is neither heated nor damaged. *Id.* Additionally, because no damage occurs where the laser beam is applied, more than one laser can be applied simultaneously for faster and improved therapy. Pending App. Paragraph [0005], lines 1-6.

Zavislan discloses a high-power laser for microsurgical treatments in dermatology. Zavislan, column 1, lines 8-11. Zavislan's laser device uses thermolysis (from thermo- meaning heat and -lysis meaning break down), which is defined as a decomposition or dissociation of chemical compounds by use of heat. Zavislan's laser device is ablative, causing destruction of spider veins, hair follicles, and adhesions between tendons and their surrounding sheath. Zavislan, column 1, lines 30-35. A laser treatment with the device disclosed in Zavislan necessarily causes a rise in temperature and changes in tissue structure to accomplish necrosis and cauterization. *Id.* In addition, particular attention to visualizing where the laser beam is applied is critical according to Zavislan so that the operator does not damage areas where no treatment is desired. Zavislan, column 2, lines 16-18.

Because therapeutic lasers and surgical lasers result in dramatically different results on a patient's body, they must be designed considering different parameters and safety concerns. Accordingly, high-power single-probe ablative lasers requiring precise aiming are not in the same field of endeavor as multi-probe low-energy therapeutic laser therapy devices.

Additionally, Applicants' invention solves the problem of how to apply multiple low-level laser beams to a patient simultaneously and with freely movable handheld

probes. Zavislan's invention does not teach or suggest any solutions because it cannot operate safely or successfully if expanded to multiple handheld probes. Ablative lasers require the operator to pay particular attention to aiming the laser beam at a single tiny treatment area, making it physically impossible to apply more than one ablative laser beam at a time. Otherwise, the operator would inadvertently damage areas not intended to be treated with a first laser while attending to the desired treatment area of a second laser. Only in the movies can a human aim and fire two laser weapons simultaneously at two different microscopic targets and hit them. It would not be reasonable for Applicants to consider destructive technology that is incapable of supporting multi-probe devices when designing a therapeutic multi-probe device.

Because Zavislan involves different types of lasers and because a low-level laser device designer would not look to high-power ablative lasers when designing a multi-probe device, Zavislan is non-analogous art. Accordingly, no *prima facie* case of obviousness has been established.

2. Claims 1-10 and 13-22 are not obvious in light of Gerdes and Zavislan because Zavislan teaches away from using more than one handheld probe.

Each of Applicants' claims 1-10 and 13-22 teaches a device comprising two or more handheld laser probes. Although Gerdes teaches multiple handheld wands, Zavislan teaches away from multiple wands. It is well-settled law that it is improper to combine references when one teaches away from the combination or renders the device inoperable for its intended purpose. *In re Gordon*, 221 USPQ at 1127.

Zavislan discloses a high power laser for microsurgical treatments in dermatology. Zavislan, column 1, lines 8-11. Zavislan's laser device is ablative, causing

destruction of spider veins, hair follicles, and adhesions between tendons and their surrounding sheath. Zavislan, column 1, lines 24-30. Because Zavislan's device causes temperature changes and structural changes in tissue, particular attention to visualizing where the laser beam is applied is critical. As stated in Zavislan:

It is the principal object of the present invention to provide an improved system for laser assisted microsurgical ... treatments in which the treatment area can be visualized while the laser beam is being located at sites in the area where treatment is desired.

Zavislan, column 2, lines 14-18. It would be impractical, possibly even dangerous, to attempt to apply multiple ablative laser beams simultaneously. Zavislan teaches a device specifically designed to allow the operator to visually aim the laser beam. Zavislan's ablative laser device will fail if it is expanded to multiple handheld probes, especially where they treat different areas simultaneously.

Accordingly, Zavislan teaches away from using multiple handheld laser probes. Because references cannot be combined where one reference teaches away from the combination, Zavislan and Gerdes cannot be combined. No *prima facie* case of obviousness has been established.

3. Claims 1-10 and 13-22 are not obvious in light of Gerdes and Zavislan because the prior art teaches against freely moving the probes.

The explicit purpose of Applicants' invention is to enable a practitioner to personally and freely treat different areas of a patient at the same time. Pending App. Paragraphs [0006] and [0007]. Each of Applicants' claims 1-10 and 13-22 teach handheld probes that "emit one or more laser beams ... while being freely moved by a user's hand relative to the surface of the skin of a patient." Gerdes and Zavislan each

teach away from freely moving the probes, albeit for different reasons. It is improper to combine references when one teaches away from the combination or renders the device inoperable for its intended purpose. *In re Gordon*, 221 USPQ at 1127.

Gerdes teaches a device wherein the wands are positioned over the patient in such a manner that the radiation from the wands intersects within the body being treated. See Gerdes column 1, lines 9-12; column 4, lines 45-50 and 56-59. Logically for the laser beams to intersect, the wands must be treating the same area of the patient. It would render Gerdes inoperable to modify it such that the laser beams treated different areas of a patient at the same time because then the laser beams would not intersect. Thus, Gerdes teaches against the probes moving freely.

As explained above, Zavislan teaches a device wherein the wand is visually positioned over a treatment area where microsurgery is desired. Because Zavislan's laser device is ablative, causing destruction of spider veins, hair follicles, and adhesions between tendons and their surrounding sheath, it is critical to aim the laser beam accurately. Zavislan, column 1, lines 24-30 and column 2, lines 14-18. It would be impractical, possibly even dangerous, to freely move one or more ablative laser beams during treatment.

Because it is improper to combine references when one teaches away from the combination or renders the device inoperable for its intended purpose, and because in this case both prior art references teach away from moving the probes freely, Gerdes and Zavislan cannot be combined. Accordingly, no *prima facie* case of obviousness has been made.

4. **Claim 2 is not obvious in light of Gerdes and Zavislan because the prior art teaches against emitting two laser beams simultaneously and impinging two different parts of a patient's body.**

Applicants' Claim 2 requires that "at least two of the laser beams are emitted simultaneously and impinge two different parts of a patient's body." As detailed earlier, Applicants' intend that their invention enable a practitioner to personally and freely treat different areas of a patient at the same time. Pending App. Paragraphs [0006] and [0007]. Gerdes and Zavislan each teach away from simultaneously treating two different parts of a patient's body, albeit for different reasons. It is improper to combine references when one teaches away from the combination or renders the device inoperable for its intended purpose. *In re Gordon*, 221 USPQ at 1127.

Again, Gerdes teaches a device wherein the wands are positioned over the patient in such a manner that the radiation from the wands intersects within the body being treated. See Gerdes column 1, lines 9-12; column 4, lines 45-50 and 56-59. Logically for the laser beams to intersect, the wands must be treating the same area of the patient. It would render Gerdes inoperable to modify it such that two laser beams simultaneously treat different areas of a patient because then the laser beams would not intersect. Thus, Gerdes teaches against the probes simultaneously treating two different areas of a patient's body.

Again, Zavislan teaches a device wherein the wand is visually positioned over a treatment area where microsurgery is desired. Because Zavislan's laser device is ablative, causing destruction of spider veins, hair follicles, and adhesions between tendons and their surrounding sheath, it is critical to visually aim the laser beam

accurately. Zavislan, column 1, lines 24-30 and column 2, lines 14-18. It would render Zavislan inoperable to modify it such that two ablative laser beams treat two different areas simultaneously because then the operator could not visually aim the laser beams. Thus, Zavislan teaches against the probes simultaneously treating two different areas of a patient's body.

Because it is improper to combine references when one teaches away from the combination or renders the device inoperable for its intended purpose, and because in this case both prior art references teach away from simultaneously treating two different parts of the body with two laser beams, Gerdes and Zavislan cannot be combined. Accordingly, no *prima facie* case of obviousness has been made.

5. Claim 16 is not obvious in light of Gerdes and Zavislan because neither Gerdes nor Zavislan suggests using ultraviolet laser light.

Applicants' claim 16 claims at least one laser energy source generating a laser beam having a wavelength in the ultraviolet range. Ultraviolet light ranges from about 4 nm to 380 nm, just beyond violet in the visible spectrum of light. Neither Gerdes nor Zavislan disclose or suggest generating a laser beam having a wavelength in the ultraviolet range.

Zavislan discloses exposing tissue to laser beams having a wavelength from 700 to 1300 nm. Zavislan, column 3, lines 57-60. Zavislan does not disclose or suggest a wavelength of less than 700 nm.

Gerdes discloses exposing tissue to converging beams of treatment (infrared) radiation having a wavelength of between approximately 900 nm and 1100 nm. Gerdes also discloses aiming (visible) radiation having a wavelength of between approximately

400 nm and 700 nm. Gerdes, column 8, lines 53-55; column 9, lines 35-39; column 12, lines 53-60; and all claims. Gerdes does not disclose a wavelength of less than 400 nm.

The Examiner alleges on page 4 of his September 28th, 2006 office action that Gerdes discloses 400nm of ultraviolet light at col. 9, line 38. Gerdes actually refers to *visible* light at 400 nm, however. Specifically, the Gerdes cite reads in its entirety:

Additionally, each of the *visible* laser radiation sources 170 is also configured to emit radiation having a wavelength preferably between approximately 400 nm to approximately 700 nm, and more preferably between about 635 nm and about 640 nm.

Gerdes at column 9, lines 34-39 (emphasis added). Ultraviolet light is not visible light. Therefore, Gerdes does not suggest an ultraviolet wavelength.

Because each reference affirmatively discloses an operating range and does not disclose operations in the ultraviolet range and because neither the nature of the problem to be solved nor the teachings of Zavislan suggests the use of ultraviolet wavelengths, neither Zavislan nor Gerdes suggests using an ultraviolet wavelength. Lacking any suggestion or motivation for an ultraviolet wavelength, no *prima facie* case of obviousness has been made.

6. Claim 17 is not obvious in light of Gerdes and Zavislan because neither Gerdes nor Zavislan suggests a linear spot shape.

Applicants' claim 17 requires one of the spot shapes to be substantially linear. Zavislan does not disclose any particular beam shapes. Moreover, while Gerdes discloses that "a wide variety of feathered, diffused, Fresnel, traced, and other types of spread-out patterns are also suitable for use with the present invention," a line is not a "spread-out" spot shape in the same sense. See Gerdes, column 9, lines 45-49. The light of Gerdes's "spread out patterns" travel in all directions in the plane of the treatment surface. A

linear spot shape, however, is not “spread out” because it travels in only one direction in the plane of the treatment surface, namely along the length of the line. Therefore, Gerdes does not disclose or suggest a line. Lacking any suggestion or motivation of a linear beam shape, no *prima facie* case of obviousness has been made.

7. Claim 19 is not obvious in light of Gerdes and Zavislan because neither Gerdes nor Zavislan suggests a plus-sign spot shape.

Applicants’ claim 19 requires one of the spot shapes to be in the shape of a plus sign. Zavislan does not disclose any particular beam shapes. Moreover, while Gerdes discloses that “a wide variety of feathered, diffused, Fresnel, traced, and other types of spread-out patterns are also suitable for use with the present invention,” a plus-sign is not a “spread-out” spot shape. See Gerdes, column 9, lines 45-49. Lacking any suggestion or motivation of a plus-sign spot shape, no *prima facie* case of obviousness has been made.

8. Claim 21 is not obvious in light of Gerdes and Zavislan because neither Gerdes nor Zavislan suggests different spot shapes.

Applicants’ claim 21 requires that the spot shape of a first laser beam to be different from a spot shape of a second laser beam; that is, the first and second beam shapes are different. Again, Zavislan does not disclose any particular beam shapes. While Gerdes discloses that “a wide variety” of “spread-out” beam shapes can be used, Gerdes does not indicate that the beam shapes emitted from the radiation sources can be different from each other. See Gerdes, column 9, lines 45-49. Lacking any suggestion or motivation of two different beam shapes, no *prima facie* case of obviousness has been made.

9. Claims 23-29 are not obvious in light of Gerdes and Zavislan because Zavislan is non-analogous art.

Each of Applicants' claims 23-29 are directed at low-power healing handheld laser probes that are freely moved by a user's hands for healing purposes. While Zavislan teaches a single handheld laser device, it teaches one in an entirely different field and solving an unrelated problem. It is well-settled law that it is improper to consider a reference that is non-analogous. *In re Oeticker*, 24 USPQ2d at 1446.

Applicant's invention is a handheld multi-probe non-ablative laser device for wound healing, edema reduction, pain relief, inflammation reduction, and other similar applications. Pending App. Paragraph [0003], lines 2-6. It uses low-level laser energy and causes no immediate detectable temperature rise and no macroscopically visible changes in tissue structure. Pending App. Paragraph [0004], lines 2-4. The treated and surrounding tissue is neither heated nor damaged. *Id.* Additionally, because no damage occurs where the laser beam is applied, more than one laser can be applied simultaneously for faster and improved therapy. Pending App. Paragraph [0005], lines 1-6. Precise and accurate aiming of each probe is not critical to successful therapeutic results.

Zavislan discloses a high-power laser for microsurgical treatments in dermatology. Zavislan, column 1, lines 8-11. Zavislan's laser device is ablative, causing destruction of spider veins, hair follicles, and adhesions between tendons and their surrounding sheath. Zavislan, column 1, lines 24-30. A laser treatment with the device disclosed in Zavislan necessarily causes changes a rise in temperature and changes in tissue structure to accomplish necrosis and cauterization. *Id.* In addition, particular

attention to visualizing where the laser beam is applied is critical according to Zavislan so that the operator does not damage areas where no treatment is desired. Zavislan, column 2, lines 16-18.

Because therapeutic lasers and surgical lasers result in dramatically different results on a patient's body, they must be designed considering different parameters and safety concerns. Accordingly, high-power single-probe ablative lasers requiring precise aiming are not in the same field of endeavor as multi-probe low-energy therapeutic laser therapy devices.

Additionally, Applicants' invention solves the problem of how to apply multiple low-level laser beams to a patient simultaneously and with freely movable handheld probes. Zavislan's invention does not teach or suggest any solutions because it cannot operate safely or successfully if expanded to multiple handheld probes. The arguments of Section VII.D.2 are incorporated herein. Ablative lasers require the operator to pay particular attention to aiming the laser beam accurately, making it impossible to apply more than one ablative laser beam at a time. It would not be reasonable for Applicants to consider destructive technology incapable of supporting multi-probe devices when designing a multi-probe therapeutic device.

Because Zavislan involves different types of lasers and because a low-level laser device designer would not look to high-power ablative lasers when designing a multi-probe device, Zavislan is non-analogous art. Accordingly, no *prima facie* case of obviousness has been established.

10. Claims 23-29 are not obvious in light of Gerdes and Zavislan because Zavislan teaches away from using more than one handheld probe.

Each of Applicants' claims 23-29 teaches a device comprising two or more handheld laser probes. Although Zavislan teaches multiple handheld wands, Zavislan teaches away from multiple wands. It is well-settled law that it is improper to combine references when one teaches away from the combination or renders the device inoperable for its intended purpose. *In re Gordon*, 221 USPQ at 1127.

Zavislan discloses a high power laser for microsurgical treatments in dermatology. Zavislan, column 1, lines 8-11. Zavislan's laser device is ablative, causing destruction of spider veins, hair follicles, and adhesions between tendons and their surrounding sheath. Zavislan, column 1, lines 24-30. Because Zavislan's device causes temperature changes and structural changes in tissue, particular attention to visualizing where the laser beam is applied is critical. As stated in Zavislan:

It is the principal object of the present invention to provide an improved system for laser assisted microsurgical ... treatments in which the treatment area can be visualized while the laser beam is being located at sites in the area where treatment is desired.

Zavislan, column 2, lines 14-18. It would be impractical, possibly even dangerous, to attempt to apply multiple ablative laser beams simultaneously. Zavislan teaches a device specifically designed to allow the operator to visually aim the laser beam. Zavislan's ablative laser device will fail if it is expanded to multiple handheld probes, especially where they treat different areas simultaneously.

Accordingly, Zavislan teaches away from using multiple handheld laser probes. Because references cannot be combined where one reference teaches away from the

combination, Zavislan and Gerdes cannot be combined. No *prima facie* case of obviousness has been established.

11. Claims 23-29 are not obvious in light of Gerdes and Zavislan because the prior art teaches against freely moving the probes.

The explicit purpose of Applicants' invention is to enable a practitioner to personally and freely treat different areas of a patient at the same time. Pending App. Paragraphs [0006] and [0007]. Each of Applicants' claims 23-29 teach handheld probes that "emit one or more laser beams ... while being freely moved by a user's hand relative to the surface of the skin of a patient." Gerdes and Zavislan each teach away from freely moving the probes, albeit for different reasons. It is improper to combine references when one teaches away from the combination or renders the device inoperable for its intended purpose. *In re Gordon*, 221 USPQ at 1127.

Gerdes teaches a device wherein the wands are positioned over the patient in such a manner that the radiation from the wands intersects within the body being treated. See Gerdes column 1, lines 9-12; column 4, lines 45-50 and 56-59. Logically for the laser beams to intersect, the wands must be treating the same area of the patient. It would render Gerdes inoperable to modify it such that the laser beams treated different areas of a patient at the same time because then the laser beams would not intersect. Thus, Gerdes teaches against the probes moving freely.

Zavislan teaches a device wherein the wand is visually positioned over a treatment area where microsurgery is desired. Because Zavislan's laser device is ablative, causing destruction of spider veins, hair follicles, and adhesions between tendons and their surrounding sheath, it is critical to aim the laser beam accurately.

Zavislan, column 1, lines 24-30 and column 2, lines 14-18. It would be impractical, possibly even dangerous, to freely move multiple ablative laser beams during treatment.

Because it is improper to combine references when one teaches away from the combination or renders the device inoperable for its intended purpose, and because in this case both prior art references teach away from moving the probes freely, Gerdes and Zavislan cannot be combined. Accordingly, no *prima facie* case of obviousness has been made.

12. **Claim 29 is not obvious in light of Gerdes and Zavislan because neither Gerdes nor Zavislan suggests using ultraviolet laser light.**

Applicants' claim 29 claims at least one laser energy source generating a laser beam having a wavelength in the ultraviolet range. Ultraviolet light ranges from about 4 nm to 380 nm, just beyond violet in the visible spectrum of light. Neither Gerdes nor Zavislan disclose or suggest generating a laser beam having a wavelength in the ultraviolet range.

Zavislan discloses exposing tissue to laser beams having a wavelength from 700 to 1300 nm. Zavislan, column 3, lines 57-60. Zavislan does not disclose or suggest a wavelength of less than 700 nm.

Gerdes discloses exposing tissue to converging beams of treatment (infrared radiation having a wavelength of between approximately 900 nm and 1100 nm. Gerdes also discloses aiming (visible) radiation having a wavelength of between approximately 400 nm and 700 nm. Gerdes column 8, lines 53-55; column 9, lines 35-39; column 12, lines 53-60; and all claims. Gerdes does not disclose a wavelength of less than 400 nm.

The Examiner alleges on page 4 of his September 28, 2006 office action that Gerdes discloses 400nm of ultraviolet light at col. 9, line 38. Gerdes actually refers to *visible* light at 400 nm, however. Specifically, the Gerdes cite reads in its entirety:

Additionally, each of the *visible* laser radiation sources 170 is also configured to emit radiation having a wavelength preferably between approximately 400 nm to approximately 700 nm, and more preferably between about 635 nm and about 640 nm.

Gerdes at column 9, lines 34-39 (emphasis added). Ultraviolet light is not visible light. Therefore, Gerdes does not suggest an ultraviolet wavelength.

Because each reference affirmatively discloses an operating range and does not disclose operations in the ultraviolet range and because neither the nature of the problem to be solved nor the teachings of Zavislan suggests the use of ultraviolet wavelengths, neither Zavislan nor Gerdes suggests using an ultraviolet wavelength. Lacking any suggestion of motivation for an ultraviolet wavelength, no *prima facie* case of obviousness has been made.

13. Claims 30 and 32 are not obvious in light of Gerdes and Zavislan because Zavislan is non-analogous art.

Each of Applicants' claims 30 and 32 are directed at low-power healing handheld laser probes that are freely moved by a user's hands for healing purposes. While Zavislan teaches a single handheld laser device, it teaches one in an entirely different field and solving an unrelated problem. It is well-settled law that it is improper to consider a reference that is non-analogous. *In re Oeticker*, 24 USPQ2d at 1446.

Applicant's invention is a handheld multi-probe non-ablative laser device for wound healing, edema reduction, pain relief, inflammation reduction, and other similar applications. Pending App. Paragraph [0003], lines 2-6. It uses low-level laser energy

and causes no immediate detectable temperature rise and no macroscopically visible changes in tissue structure. Pending App. Paragraph [0004], lines 2-4. The treated and surrounding tissue is neither heated nor damaged. *Id.* Additionally, because no damage occurs where the laser beam is applied, more than one laser can be applied simultaneously for faster and improved therapy. Pending App. Paragraph [0005], lines 1-6. Precise and accurate aiming of each probe is not critical to successful therapeutic results.

Zavislan discloses a high-power laser for microsurgical treatments in dermatology. Zavislan, column 1, lines 8-11. Zavislan's laser device is ablative, causing destruction of spider veins, hair follicles, and adhesions between tendons and their surrounding sheath. Zavislan, column 1, lines 24-30. A laser treatment with the device disclosed in Zavislan necessarily causes changes in tissue structure and temperature rises. In addition, particular attention to visualizing where the laser beam is applied is critical according to Zavislan so that the operator does not damage areas where no treatment is desired. Zavislan, column 2, lines 16-18.

Because therapeutic lasers and surgical lasers result in dramatically different results on a patient's body, they must be designed considering different parameters and safety concerns. Accordingly, high-power single-probe ablative lasers requiring precise aiming are not in the same field of endeavor as multi-probe low-energy therapeutic laser therapy devices.

Additionally, Applicants' invention solves the problem of how to apply multiple low-level laser beams to a patient simultaneously and with freely movable handheld probes. Zavislan's invention does not teach or suggest any solutions because it cannot

operate safely or successfully if expanded to multiple handheld probes. Ablative lasers require the operator to pay particular attention to aiming and focusing the laser beam accurately, making it impossible to apply more than one ablative laser beam at a time. It would not be reasonable for Applicants to consider technology incapable of supporting multi-probe devices when designing a therapeutic device for treating multiple areas simultaneously with non-ablative lasers.

Because Zavislan involves different types of lasers and because a low-level laser device designer would not look to high-power ablative lasers when designing a multi-probe device, Zavislan is non-analogous art. Accordingly, no *prima facie* case of obviousness has been established.

14. Claims 30 and 32 are not obvious in light of Gerdes and Zavislan because Zavislan teaches away from using more than one handheld probe.

Each of Applicants' claims 30 and 32 teaches a device comprising two or more handheld laser probes. Although Zavislan teaches multiple handheld wands, Zavislan teaches away from multiple wands. It is well-settled law that it is improper to combine references when one teaches away from the combination or renders the device inoperable for its intended purpose. *In re Gordon*, 221 USPQ at 1127.

Zavislan discloses a high power laser for microsurgical treatments in dermatology. Zavislan, column 1, lines 8-11. Zavislan's laser device is ablative, causing destruction of spider veins, hair follicles, and adhesions between tendons and their surrounding sheath. Zavislan, column 1, lines 24-30. Because Zavislan's device causes temperature changes and structural changes in tissue, particular attention to visualizing where the laser beam is applied is critical. As stated in Zavislan:

It is the principal object of the present invention to provide an improved system for laser assisted microsurgical ... treatments in which the treatment area can be visualized while the laser beam is being located at sites in the area where treatment is desired.

Zavislan, column 2, lines 14-18. It would be impractical, possibly even dangerous, to attempt to apply multiple ablative laser beams simultaneously. Zavislan teaches a device specifically designed to allow the operator to visually aim the laser beam. Zavislan's ablative laser device will fail if it is expanded to multiple handheld probes, especially where they treat different areas simultaneously.

Accordingly, Zavislan teaches away from using multiple handheld laser probes. Because references cannot be combined where one reference teaches away from the combination, Zavislan and Gerdes cannot be combined. No *prima facie* case of obviousness has been established.

15. Claims 30 and 32 are not obvious in light of Gerdes and Zavislan because the prior art teaches against freely moving the probes.

The explicit purpose of Applicants' invention is to enable a practitioner to personally and freely treat different areas of a patient at the same time. Pending App. Paragraphs [0006] and [0007]. Each of Applicants' claims 30 and 32 teach handheld probes that "emit one or more laser beams ... while being freely moved by a user's hand relative to the surface of the skin of a patient." Gerdes and Zavislan each teach away from freely moving the probes, albeit for different reasons. It is improper to combine references when one teaches away from the combination or renders the device inoperable for its intended purpose. *In re Gordon*, 221 USPQ at 1127.

Gerdes teaches a device wherein the wands are positioned over the patient in such a manner that the radiation from the wands intersects within the body being treated. See Gerdes column 1, lines 9-12; column 4, lines 45-50 and 56-59. Logically for the laser beams to intersect, the wands must be treating substantially the same area of the patient. It would render Gerdes inoperable to modify it such that the laser beams treated different areas of a patient at the same time because then the laser beams would not intersect. Thus, Gerdes teaches against the probes moving freely.

Zavislan teaches a device wherein the wand is visually positioned over a treatment area where microsurgery is desired. Because Zavislan's laser device is ablative, causing destruction of spider veins, hair follicles, and adhesions between tendons and their surrounding sheath, it is critical to aim the laser beam accurately. Zavislan, column 1, lines 24-30 and column 2, lines 14-18. It would be impractical, possibly even dangerous, to freely move one or more ablative laser beams during treatment.

Because it is improper to combine references when one teaches away from the combination or renders the device inoperable for its intended purpose, and because in this case both prior art references teach away from moving the probes freely, Gerdes and Zavislan cannot be combined. Accordingly, no *prima facie* case of obviousness has been made.

Conclusion

Applicants have shown that Claims 1-10, 13-30, and 32 are not obvious under 35 USC 103(a) in light of Gerdes and Zavislan for one or more reasons explained above. Reversal of the rejections is respectfully requested.

VIII. Conclusion

Applicants believe they have shown that none of the Examiner's rejections in the pending application should be sustained. Applicants respectfully request that the Board reverse all the Examiner's rejections and allow the case to proceed to issuance.

Date: 9/25/2007

Respectfully submitted,



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Reference R-6



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PHOENIX, AZ 85008

EXAMINER

JOHNSON III, HENRY M.

ART UNIT	PAPER NUMBER
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3739

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11/01/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Exhibit J



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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/612,504
Filing Date: July 01, 2003
Appellant(s): SHANKS ET AL.

**MAILED
NOV 1 - 2007
GROUP 3700**

Sandra L. Etherton
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed September 27, 2007 appealing from the Office action mailed September 28, 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

No appeals or interferences are pending which may be related to, directly affect, be directly affected by, or have a bearing on the Board's decision in the pending appeal, however, a listing of copending patent applications or litigation related to the application on appeal is contained in the brief.

Art Unit: 3739

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The general summary of claimed subject matter contained in the brief is correct, although characterization as a single laser is inaccurate as each embodiment has multiple laser sources.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. The changes are as follows: In the office action of September 28, 2006 only claims 1, 2, 8-10, 13-15 and 22 were rejected under 35 U.S.C. 102(b) as anticipated by Lai.

The obvious double patenting rejection was not restated in the office action of September 28, 2006. The Applicant holds that such rejection is not proper until the claims are found allowable, however, this is not supported by the MPEP. This will remain moot if the rejections under 35 U.S.C. 102 and 103 are affirmed.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,074,411	Lai	06-2000
6,267,779	Gerdes	07-2001
5,653,706	Zavislan et al.	08-1997
6,746,473	Shanks et al.	06-2004

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1, 2, 8-10, 13-15 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 6,074,411 to Lai et al. Lai et al. teach a multiple laser diode apparatus for therapy using multiple probes (Fig. 1), each with a laser diode (semiconductor diode) with a wavelength between 500 and 1500 nanometers operating at about 5 mW (Col. 2, lines 42-45) and the probe is disclosed as having focusing optics (Col. 2, lines 32-35). The wavelength range includes visible, red and infrared wavelengths. Lai teaches an embodiment with an adhesive (Fig. 1) and an embodiment with just a laser probe (Fig. 2). The second embodiment is clearly capable of being moved by an operator's hand while in operation with no other supporting structure. The control unit is interpreted as a base unit. The focusing optics are an optical arrangement and any optical element will result in some transformation of the beam as that is the reason for using such an element. The resultant beam will have some shape, although no specific shape is claimed.

Regarding claim 2, the destination of the beams is intended use with no limitation on the device structure.

Claims 1-10, 13-30 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,267,779 to Gerdes in view of U.S. Patent to Zavislan et al.

Gerdes discloses an apparatus for therapeutic laser treatment that includes handheld wands (Fig. 7) that each may deliver two wavelengths of laser energy, one in the near infrared range and the other in the visible range (Col. 8, line 54) from solid-state diode lasers (Col. 7, lines 22-24). The beams are combined and delivered to the wands that include adjustable optics to focus and shape the beams (Col. 8, lines 31-34). The beam shape may be circular or

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rectangular (Col. 9, line 49), or a variety of other patterns. This is interpreted as anticipating the various shapes claimed as a skilled artisan is capable of generating a desired shape and size of the beam and no specific benefit or unexpected result is disclosed for any of the claimed shapes. A controller for the sources is disclosed that may control the pulse parameters, including, continuous or pulsed, pulse duty cycle and duration of application for each of the radiation sources synchronously or independently with continuous operation possible by selection of a duty cycle of 100 percent (Col. 11, lines 3-8). Specifically mentioned is a pulse frequency of one hertz (Col. 11, line 63). The system is capable of emitting radiation at less than one watt; with 0 to 2.0 W specified for the infrared laser diode and 0 to 6 mW specified for the visible laser diode (Col. 9, lines 14 and 31). The wavelength disclosed for the visible beam is 400 to 700 nm (col. 9, line 38), and 900 to 1100 nanometers for the infrared beam (Col. 9, line 27). It is noted that 400 nanometers is the limit of the ultraviolet spectrum (UV-A), thus teaching radiation in that spectrum. The handheld wands are connected to the radiation sources within the controller cabinet (base) via optical fibers (Col. 8, lines 23-25). Gerdes discloses a mode in which only the two aiming beams are generated (Col. 11, lines 45-50), after which, a routine is executed to determine if operation of the therapeutic laser is proper, thus teaching visible radiation only from the wands. Gerdes does not teach the laser sources within the wand or probe. Zavislan et al. teaches a hand held probe for delivery of laser energy to tissue. The laser beam may be provided by a laser source external to the housing which is introduced into the housing through an optical fiber cable or by a laser, such as a solid state laser (e.g. a laser diode) which is mounted in the housing. The housing contains optical means for projecting and focusing the beam (Col. 2, lines 62-67). Thus, Zavislan et al. teach the source may be located within or external to the probe and reinforces the use of optics with laser devices. It would have been obvious to one skilled in the art at the time the invention was made to mount the laser

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source within the probe as taught by Zavislan et al. in the invention of Gerdes to eliminate the need for an optical fiber, make the device portable and better control the beam path. Zavislan et al. suggests this mounting and advances in laser technology have reduced the size of laser sources further enabling internal mounting. Note that Lai et al., as discussed above, also teaches internal mounting of laser diodes in a probe, providing another teaching of mounting a laser source within a probe or handpiece.

Regarding claim 30, Gerdes teaches the probes radiate in the visible range of 400 to 700 nanometers, yet does not specifically disclose the radiation of the probes at different visible wavelengths. One of skill in the art would recognize the need to be able to differentiate the beams from each probe and would therefore provide a means to do so. An obvious means for differentiation would be a different color beam.

(10) Response to Arguments

The Applicant argues that Lai et al. fails to disclose moving the laser probes while emitting laser beams. An apparatus claim is based on the structure of the device without regard to the manner in which it is intended or might be used. Lai et al. clearly anticipates the structure of the claimed device. Further, Lai et al. teach a specific embodiment without an adhesive ring (Fig. 2) that is clearly capable of being freely moved by a hand while radiating. Lai et al. therefore, does not teach away from moving the wand by hand.

Lai et al. clearly teach the use of optics. The beam inherently must have some shape. The claims rejected by Lai et al. only specify a shape with no specific shape claimed.

Applicant's arguments regarding rejection of claims 30 and 32 by Lai et al. are in error as these claims are not included in the Lai et al. rejection.

A skilled artisan includes both the laser and optics arts as the two are used together extensively as evidenced by the cited references.

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The obvious double patenting rejections will be held in abeyance pending the appeal. Such rejections are not dependent on the claims having been allowed as stated by the Applicant.

The examiner takes the position that Zavislan et al. is clearly analogous art in that it is a device for irradiating tissue with a laser beam. Such laser radiation is classified in class 606 or class 607 depending of whether the treatment is surgical (cutting, coagulating, etc.) or therapeutic (tanning, photodynamic, etc). The determining factor is usually the laser intensity, with the structures being very similar, thus they are analogous art. The issue is moot in that Zavislan et al. is used as a teaching for mounting a laser within a probe, a structural feature that may as likely be found in a wood or metal etching probe as well as a medical device. KSR clearly teaches such as transferable between arts.

Regarding Zavislan et al. teaching away from using multiple probes, as stated above, Zavislan et al. is used for an entirely different rationale, that of mounting the energy source within the probe or handpiece. The evolution of technology to smaller laser sources has enabled the mounting in smaller enclosures.

Arguments regarding movement of the probes of Gerdes and Zavislan et al. are related to the use of the device. The structures of both Gerdes and Zavislan et al. are capable of being moved while radiating. It is noted for the record that devices with interlocks to prohibit radiation unless in contact with skin are known. Neither Gerdes nor Zavislan et al. disclose such an interlock.

Regarding radiation simultaneously on different parts of a body, Gerdes clearly teaches simultaneous operation and is capable of directing the probes to different tissue areas. As previously discussed, Zavislan et al. provides a teaching of mounting a source within a probe. This limited teaching does not impact the intended use of the device.

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Regarding the argument that the combination of Gerdes and Zavislan et al. does not teach UV radiation, Gerdes explicitly discloses a wavelength preferably between approximately 400 nanometers to approximately 700 nanometers (Col. 9, line 38), the 400 nanometers is both visible and at the high end of the UV-A spectrum.

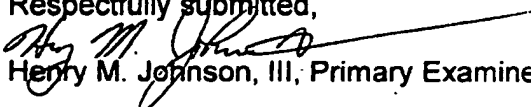
Regarding the shape of the treatment spot, Gerdes clearly teaches a variety of spot shapes; i.e. "although a circular beam shape of approximately 4 mm is disclosed, a wide variety of feathered, diffused, Fresnel, traced, and other types of spread-out patterns are also suitable for use with the present invention. Such patterns also include rectangular, square, oval, and elliptical patterns, as well as predetermined or random movably scanned or traced beam patterns that are adapted to be spread over a selected region or to trace a specific shape or pattern" (Col. 9, lines 45-53). One of skill in the art would clearly use such teachings to provide an irradiation spot appropriate for the intended target.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.


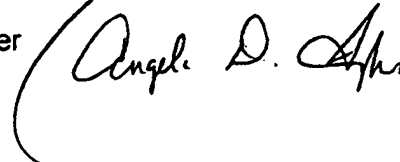
Respectfully submitted,


Henry M. Johnson, III, Primary Examiner

Conferees:

Linda Dvorak, Supervisory Patent Examiner

Angela Sykes, Supervisory Patent Examiner

Reference R-9



UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/612,504	07/01/2003	Steven C. Shanks	206-038	3500
33354	7590	09/28/2006		
ETHERTON LAW GROUP, LLC 5555 E. VAN BUREN STREET, SUITE 100 PHOENIX, AZ 85008			EXAMINER JOHNSON III, HENRY M	
			ART UNIT	PAPER NUMBER
			3739	

DATE MAILED: 09/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/612,504

Applicant(s)

SHANKS ET AL.

Examiner

Henry M. Johnson, III

Art Unit

3739

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 August 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10, 13-30, 32 and 35-39 is/are pending in the application.
- 4a) Of the above claim(s) 35-39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 13-30 and 32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
- Paper No(s)/Mail Date 110905.

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 8-10, 13-15 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 6,074,411 to Lai et al. Lai et al. teach a multiple laser diode apparatus for therapy using multiple probes (Fig. 1), each with a laser diode with a wavelength between 500 and 1500 nanometers operating at about 5 mW (Col. 2, lines 42-45) and the probe is disclosed as having focusing optics (Col. 2, lines 32-35). The wavelength range includes visible, red and infrared wavelengths. Lai teaches an embodiment with an adhesive (Fig. 1) and an embodiment with just a laser probe (Fig. 2). The second embodiment is clearly capable of being moved by an operator's hand while in operation with no other supporting structure. The control unit is interpreted as a base unit. The focusing optics are an optical arrangement and any optical element will result in some transformation of the beam as that is the reason for using such an element. The resultant beam will have some shape, although no specific shape is claimed.

Regarding claim 2, the destination of the beams is intended use with no further limitation on the device structure.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 1-10, 13-30 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,267,779 to Gerdes in view of U.S. Patent to Zavislan et al.

Gerdes discloses an apparatus for therapeutic laser treatment that includes handheld wands (Fig. 7) that each may deliver two wavelengths of laser energy, one in the near infrared range and the other in the visible range (Col. 8, line 54) from solid-state diode lasers (Col. 7, lines 22-24). The beams are combined and delivered to the wands that include adjustable optics to focus and shape the beams (Col. 8, lines 31-34). The beam shape may be circular or rectangular (Col. 9, line 49), or a variety of other patterns. This is interpreted as anticipating the various shapes claimed as a skilled artisan is capable of generating a desired shape and size of the beam and no specific benefit or unexpected result is disclosed for any of the claimed shapes. A controller for the sources is disclosed that may control the pulse parameters, including, continuous or pulsed, pulse duty cycle and duration of application for each of the radiation sources synchronously or independently with continuous operation possible by selection of a duty cycle of 100 percent (Col. 11, lines 3-8). Specifically mentioned is a pulse frequency of one hertz (Col. 11, line 63). The system is capable of emitting radiation at less than one watt; with 0 to 2.0 W specified for the infrared laser diode and 0 to 6 mW specified for the visible laser diode (Col. 9, lines 14 and 31). The wavelength disclosed for the visible beam is 400 to 700 nm (col. 9, line 38), and 900 to 1100 nanometers for the infrared beam (Col. 9, line 27). It is noted that 400 nanometers is the limit of the ultraviolet spectrum, thus teaching radiation in that spectrum. The handheld wands are connected to the radiation sources within the controller cabinet (base) via optical fibers (Col. 8, lines 23-25). Gerdes discloses a mode in which only the two aiming beams are generated (Col. 11, lines 45-50), after which, a routine is executed to determine if operation of the therapeutic laser is proper, thus teaching visible radiation only from the wands. Gerdes does not teach the laser sources within the wand or

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Response to Arguments

Applicant's Appeal Brief filed August 2, 2006 is acknowledged. Prosecution on the merits of this application is reopened and the finality of the office action of November 10, 2005 is withdrawn. Lai et al. teach a specific embodiment without an adhesive ring (Fig. 2) that is clearly capable of being freely moved by a hand while radiating. Lai et al. therefore, does not teach away from moving the wand by hand. A new office action is provided herein. One skilled in the art as used by the examiner, includes both the laser art and optics as lasers in the medical area most commonly use optics.

Election/Restrictions

Newly submitted claims 35-39 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Surgical methods are classified in 128/898 while light therapeutic devices are classified in 607/89.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 35-39 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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probe. Zavislan et al. teaches a hand held probe for delivery of laser energy to tissue. The laser beam may be provided by a laser external of the housing which is introduced into the housing through an optical fiber cable, an articulated optical delivery arm or by a laser, such as a solid state laser (e.g. a laser diode) which is mounted in the housing. The housing contains optical means for projecting and focusing the beam (Col. 2, lines 62-67). Thus, Zavislan et al. teach the source may be located within or external to the probe. It would have been obvious to one skilled in the art at the time the invention was made to mount the laser diodes in the probe as taught by Zavislan et al. in the invention of Gerdes to eliminate the need for an optical fiber and better control the beam path. Zavislan et al. suggests this mounting and advances in laser technology have reduced the size of laser sources further enabling internal mounting. Note that Lai et al., as discussed above, also teaches internal mounting of laser diodes in a probe.

Regarding claim 30, Gerdes teaches the probes radiate in the visible range of 400 to 700 nanometers, yet does not specifically disclose the radiation of the probes is at different visible wavelengths. One of skill in the art would recognize the need to be able to differentiate the beams from each probe and would therefore provide a means to do so. An obvious means for differentiation would be a different color beam.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent 6,273,884 teaches both internal and externally mounted laser sources.

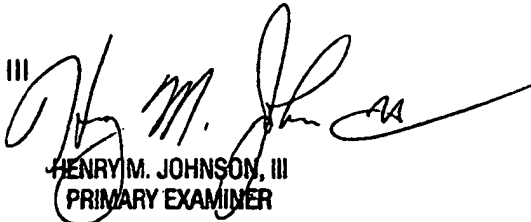
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Henry M. Johnson, III whose telephone number is (571) 272-4768. The examiner can normally be reached on Monday through Friday from 6:00 AM to 3:00 PM.

Art Unit: 3739

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Linda C. Dvorak can be reached on (571) 272-4764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Henry M. Johnson, III
Primary Examiner
Art Unit 3739



HENRY M. JOHNSON, III
PRIMARY EXAMINER

Reference R-10



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/612,504	07/01/2003	Steven C. Shanks	206-038	3500

33354 7590 06/05/2007

ETHERTON LAW GROUP, LLC
5555 E. VAN BUREN STREET, SUITE 100
PHOENIX, AZ 85008

EXAMINER

ART UNIT PAPER NUMBER

DATE MAILED: 06/05/2007

Please find below and/or attached an Office communication concerning this application or proceeding.

**Notification of Non-Compliant Appeal Brief
(37 CFR 41.37)**

Application No.

10/612,504

Applicant(s)

SHANKS ET AL.

Examiner

Henry M. Johnson, III

Art Unit

3739

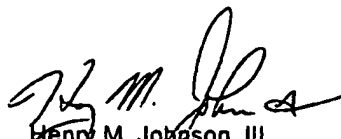
--The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

The Appeal Brief filed on 05 March 2007 is defective for failure to comply with one or more provisions of 37 CFR 41.37.

To avoid dismissal of the appeal, applicant must file an amended brief or other appropriate correction (see MPEP 1205.03) within **ONE MONTH or THIRTY DAYS** from the mailing date of this Notification, whichever is longer.
EXTENSIONS OF THIS TIME PERIOD MAY BE GRANTED UNDER 37 CFR 1.136.

1. ☐ The brief does not contain the items required under 37 CFR 41.37(c), or the items are not under the proper heading or in the proper order.
2. ☐ The brief does not contain a statement of the status of all claims, (e.g., rejected, allowed, withdrawn, objected to, canceled), or does not identify the appealed claims (37 CFR 41.37(c)(1)(iii)).
3. ☐ At least one amendment has been filed subsequent to the final rejection, and the brief does not contain a statement of the status of each such amendment (37 CFR 41.37(c)(1)(iv)).
4. ☐ (a) The brief does not contain a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, referring to the specification by page and line number and to the drawings, if any, by reference characters; and/or (b) the brief fails to: (1) identify, for each independent claim involved in the appeal and for each dependent claim argued separately, every means plus function and step plus function under 35 U.S.C. 112, sixth paragraph, and/or (2) set forth the structure, material, or acts described in the specification as corresponding to each claimed function with reference to the specification by page and line number, and to the drawings, if any, by reference characters (37 CFR 41.37(c)(1)(v)).
5. ☐ The brief does not contain a concise statement of each ground of rejection presented for review (37 CFR 41.37(c)(1)(vi)).
6. ☐ The brief does not present an argument under a separate heading for each ground of rejection on appeal (37 CFR 41.37(c)(1)(vii)).
7. ☐ The brief does not contain a correct copy of the appealed claims as an appendix thereto (37 CFR 41.37(c)(1)(viii)).
8. ☐ The brief does not contain copies of the evidence submitted under 37 CFR 1.130, 1.131, or 1.132 or of any other evidence entered by the examiner and relied upon by appellant in the appeal, along with a statement setting forth where in the record that evidence was entered by the examiner, as an appendix thereto (37 CFR 41.37(c)(1)(ix)).
9. ☐ The brief does not contain copies of the decisions rendered by a court or the Board in the proceeding identified in the Related Appeals and Interferences section of the brief as an appendix thereto (37 CFR 41.37(c)(1)(x)).
10. ☒ Other (including any explanation in support of the above items):

The Appeal Brief contains arguments not directed to the current rejections. No rejections using Lai in view of Gerdes are submitted in the office action of 9/28/2006.


Henry M. Johnson, III
Primary Examiner
Art Unit: 3739

Reference R-11



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application:

Serial No. 10/612,504
Inventors: SHANKS, Steven C. and TUCEK, Kevin B.
Invention: Multi-Probe Device
Filing Date: 07/01/2003
Atty Docket No.: 206-038

CERTIFICATE OF EXPRESS MAILING	
I hereby certify that the following correspondence is being deposited with the United States Postal Service as EXPRESS MAIL, postage paid, in an envelope addressed to: Director of U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450, on:	
Date <u>6/29/07</u>	 Sandra L. Ederton
Express Mail Number: <u>EB 377404 849 US</u>	

PETITION TO DISPUTE NOTIFICATION OF NON-COMPLIANT APPEAL BRIEF

Director of the U.S. Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This letter is a petition under 37 CFR §1.181 disputing the Notification of Non-Compliant Appeal Brief issued on June 5, 2007 regarding Applicants' Supplemental Appeal Brief filed March 5, 2007. See MPEP §1205.03; MPEP §1002.02(c); Inventors Assistance Center Helpline. This petition is filed within the stated two month period of 37 CFR §1.181(f) and is therefore considered timely filed. A charge form for the \$400 filing fee for this Petition is enclosed.

Summary

Applicants originally filed a Notice of Appeal and Appeal Brief to dispute rejections the Examiner made in a Final Office Action. Among other rejections, the Examiner had rejected some of Applicants' claims as obvious based on the combination of U.S. Patent 6,074,411 issued to Lai et al. ("Lai") and U.S. Patent 6,267,779 issued to Gerdes ("Gerdes").

After receiving Applicants' Appeal Brief, the Examiner reopened prosecution and issued a new office action citing a new ground for rejection. In the new office action, the Examiner did not address whether Applicants' arguments disputing obviousness were persuasive. Instead, the Examiner rebutted Applicants' non-obvious arguments and stated that Lai did not teach away from Applicants' invention.

In response to the new office action, Applicants filed a Petition to Revive the Appeal and a new Supplemental Appeal Brief. The Supplemental Appeal Brief incorporates by reference the earlier Appeal Brief, including Applicants' original arguments that combining Lai and Gerdes does not make Applicants claimed invention obvious.

The Examiner now asserts that his earlier obviousness rejection citing Lai and Gerdes is no longer appropriate for this appeal because it was not part of the Examiner's most recent office action. Accordingly, the Examiner finds Applicants' Supplemental Appeal Brief non-compliant. Applicants, however, assert that the Examiner never withdrew his obviousness rejection citing Lai and Gerdes. Therefore, arguments addressing the rejection are proper, and Applicants' Supplemental Appeal Brief is compliant.

Detailed Statement of Facts Involved

In a final office action dated November 10, 2005, among other rejections, the Examiner rejected Applicants' claims 3-7, 16-22, and 23-29 as being obvious over U.S. Patent 6,074,411 issued to Lai et al. ("Lai") in light of U.S. Patent 6,267,779 issued to Gerdes ("Gerdes"). November 10, 2005, Final Office Action, pp. 4-5, attached hereto as Exhibit A. Applicants responded to the final office action with arguments and proposed amendments on March 8, 2006. The Examiner issued an advisory action on March 29, 2006, rejecting Applicants' proposed amendments and not addressing Applicants' arguments.

On May 2, 2006, Applicants filed a Notice of Appeal, and on August 2, 2006, Applicants filed an Appeal Brief that included arguments directed toward the Examiner's obviousness rejections citing Lai and Gerdes from his November 10, 2005, Final Office Action. See Appeal Brief, pp. 23-34, attached hereto as Exhibit B. On September 28, 2006, the Examiner reopened prosecution and issued a new office action citing a new ground for rejection. See September 28, 2006, Office Action, attached hereto as Exhibit C. With respect to Applicants' arguments

addressing the Examiners' earlier obviousness rejection over Lai in view of Gerdes, the Examiner stated:

Applicant's Appeal Brief filed August 2, 2006 is acknowledged. Prosecution on the merits of this application is reopened and the finality of the office action of November 10, 2005 is withdrawn. *Lai et al. teach a specific embodiment without an adhesive ring (Fig. 2) that is clearly capable of being freely moved by a hand while radiating. Lai et al. therefore does not teach away from moving the wand by hand.* A new office action is provided herein. One skilled in the art as used by the examiner, includes both the laser art and optics as lasers in the medical area most commonly use optics.

September 28, 2006, Office Action, p. 2 (emphasis added).

In response to the Examiner's new office action, Applicants filed a Petition to Revive the Appeal on January 29, 2007, and a new Supplemental Appeal Brief on March 5, 2007, which incorporates by reference the earlier Appeal Brief. The Supplemental Appeal Brief addresses the new rejection made by the Examiner as well as the Examiner's earlier obviousness rejections citing Lai and Gerdes. See Supplemental Appeal Brief, p. 15, attached hereto as Exhibit D

The Examiner now states in a Notification of Non-Compliant Appeal Brief that Applicants' brief "contains arguments not directed to the current rejections. No rejections using Lai in view of Gerdes are submitted in the office action of 9/28/2006." See Notification of Non-Compliant Appeal Brief, attached hereto as Exhibit E.

Point to be Reviewed

At issue is whether the Examiner accepted as persuasive Applicants' arguments in their Appeal Brief that their claimed invention is not obvious over Lai in view of Gerdes. According to the MPEP, "[i]f applicant's arguments are persuasive and upon reconsideration of the rejection, the examiner determines that the previous rejection should be withdrawn, the examiner *must* provide in the next Office communication the reasons why the previous rejection is withdrawn by referring specifically to the page(s) and line(s) of applicant's remarks which form the basis for withdrawing the rejection." MPEP §707.07 (emphasis added).

The Examiner did not state that Applicants' arguments were persuasive. To the contrary, the Examiner specifically rebutted Applicants' non-obvious argument with respect to Lai and Gerdes by stating that "Lai et al. therefore, does not teach away" September 28, 2006, Office Action, p. 2. Without any express assertions to the contrary, Applicants must be prudent

and assume that the Examiner has neither accepted Applicants' arguments nor withdrawn the obviousness rejection of claims 3-7, 16-22, and 23-29 over Lai in view of Gerdes.

Accordingly, whether the Examiner rightfully determined that Applicants' claimed invention is obvious over Lai in view of Gerdes remains a matter for review by the Board of Patent Appeals and Interferences.

Action Requested

Because the Examiner never affirmatively withdrew his obviousness rejections based on the combination of Lai and Gerdes, Applicants respectfully submit that they must include arguments regarding these rejections in Applicants' Supplemental Appeal Brief. Accordingly, Applicants' Supplemental Appeal Brief is compliant, and Applicants request that the Notification of Non-Compliant Appeal Brief be withdrawn and that Applicants' original Supplemental Appeal Brief be accepted.

Respectfully submitted,

6/29/07



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Reference R-12



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/612,504

07/01/2003

Steven C. Shanks

206-038

3500

33354

7590

09/14/2007

ETHERTON LAW GROUP, LLC
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PHOENIX, AZ 85008

EXAMINER

JOHNSON III, HENRY M

ART UNIT

PAPER NUMBER

3739

MAIL DATE

DELIVERY MODE

09/14/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.



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PHOENIX AZ 85008

In re Application of:
Shanks, Steven C. et al
Serial No. 10/612,504
Filed: Jul.1, 2003
Docket: 206-038
Title:

MULTI-PROBE LASER DEVICE

DECISION ON PETITION
UNDER 37 CFR § 1.181

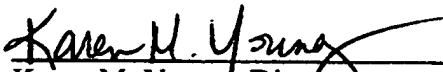
This is a decision on the petition filed Jun. 29, 2007 under 37 CFR 1.181 requesting withdrawal of the Notification of Non-Compliant Appeal Brief issued on Jun. 5, 2007.

The petition is granted.

In finding petitioner's points of argument persuasive and after consultation with the examiner, the requested relief is granted. It was determined that the rejection of claims 3-7 and 16-22 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,074,411 to Lai et al. in view of U.S. Patent 6,267,779 to Gerdes was withdrawn in the non-final Office action mailed on Sep. 28, 2006 in view of the arguments advanced by the applicant in the appeal brief filed on Aug. 2, 2006. The Notification of Non-Compliant Appeal Brief issued on Jun. 5, 2007 is hereby withdrawn. The examiner has been directed in his next Office action or by a separate letter to expressly state the reason for withdrawal of the rejection of claims 3-7 and 16-22 under 35 U.S.C. 103(a) as being unpatentable over Lai et al. in view of Gerdes in accordance with the MPEP 707.07(f)¹.

The application is being forwarded to Examiner Johnson of Art Unit 3739 for explanation of the withdrawal of rejection as noted above. Any inquiry regarding this decision should be directed to Henry C. Yuen, Special Programs Examiner at (571) 272-4856.

PETITION GRANTED.


Karen M. Young, Director
Technology Center 3700

¹ Relevant portion of MPEP 707.07(f) [R-3] Answer All Material Traversed In order to provide a complete application file history and to enhance the clarity of the prosecution history record, an examiner must provide clear explanations of all actions taken by the examiner during prosecution of an application. Where the requirements are traversed, or suspension thereof requested, the examiner should make proper reference thereto in his or her action on the amendment. Where the applicant traverses any rejection, the examiner should, if he or she repeats the rejection, take note of the applicant's argument and answer the substance of it. If applicant's arguments are persuasive and upon reconsideration of the rejection, the examiner determines that the previous rejection should be withdrawn, the examiner must provide in the next Office communication the reasons why the previous rejection is withdrawn by referring specifically to the page(s) and line(s) of applicant's remarks which form the basis for withdrawing the rejection. It is not acceptable for the examiner to merely indicate that all of applicant's remarks form the basis for withdrawing the previous rejection. Form paragraph 7.38.01 may be used.

Reference R-13



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/612,504	07/01/2003	Steven C. Shanks	206-038	3500
33354	7590	09/24/2007	EXAMINER	
ETHERTON LAW GROUP, LLC 5555 E. VAN BUREN STREET, SUITE 100 PHOENIX, AZ 85008			ART UNIT	PAPER NUMBER

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APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
10612504	7/1/2003	SHANKS ET AL.	206-038

ETHERTON LAW GROUP, LLC
5555 E. VAN BUREN STREET, SUITE 100
PHOENIX, AZ 85008

EXAMINER

Henry M. Johnson, III

ART UNIT**PAPER**

3739

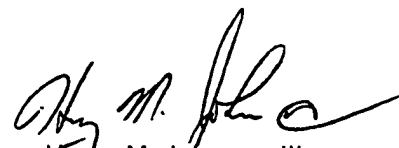
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Commissioner for Patents

The rejection of claims 3-7 and 16-22 under 35 U.S.C.103(a) as being unpatentable over U.S. Patent 6,074,411 to Lai et al. in view of U.S. Patent 6,267,779 to Gerdes was withdrawn in the non-final Office action mailed on Sep. 28, 2006 in view of the arguments advanced by the applicant on pages 23-29 (sections 1-7) of the appeal brief filed on Aug. 2, 2006. New rejections of these claims under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,267,779 to Gerdes in view of U.S. Patent to Zavislan et al. was provided in said office action.


Henry M. Johnson, III
Primary Examiner
Art Unit: 3739

Reference R-14

TITLE

Multi-Probe Laser Device

FIELD OF INVENTION

[0001] This invention relates generally to medical devices that employ lasers. More particularly, this invention relates to a laser light generator device that has multiple probes, enabling multiple different treatments to be made simultaneously.

CROSS-REFERENCE TO RELATED APPLICATIONS

[0002] This application claims the benefit of co-pending U.S. Application No. 09/932,907 filed 08/20/2001 which claims the benefit of U.S. Provisional Application No. 60/273,282 filed March 2, 2001.

BACKGROUND

[0003] Low energy laser therapy (LLLT) is used in the treatment of a broad range of conditions. LLLT improves wound healing, reduces edema, and relieves pain of various etiologies, including successful application post-operatively to liposuction to reduce inflammation and pain. LLLT is also used during liposuction procedures to facilitate removal of fat by causing intracellular fat to be released into the interstice. It is also used in the treatment and repair of injured muscles and tendons.

[0004] LLLT utilizes low level laser energy, that is, the treatment has a dose rate that causes no immediate detectable temperature rise of the treated tissue and no macroscopically visible changes in tissue structure. Consequently, the treated and surrounding tissue is not heated and is not damaged. There are a number of variables in laser therapy including the wavelength of the laser beam, the area impinged by the laser beam, laser energy, pulse width, treatment duration and tissue characteristics. The success of each therapy depends on the relationship and combination of these variables. For example, liposuction may be facilitated with one regimen utilizing a given wavelength and treatment duration, whereas pain may be treated with a regimen utilizing a different wavelength and treatment duration, and inflammation a third regimen. Specific devices are known in the art for each type of therapy.

[0005] Often it is desirable to treat a patient for multiple types of problems during a single treatment. Because specific therapies require different regimen, treating multiple problems currently requires multiple separate laser devices. It is desirable to provide a device that enables multiple types of treatments with a single device. It is also desirable to be able to provide multiple treatments simultaneously with a single device, in different areas of a patient's body.

[0006] Therefore, an object of this invention is to provide a laser therapy device that enables multiple types of treatments. It is another object to provide a single device that provides these treatments simultaneously. It is another object of this invention to provide an apparatus that can simultaneously emit multiple beams of laser light that can be applied to multiple areas of a patient's body. It is another object of this invention to provide an apparatus that can simultaneously emit laser light in multiple different pulse widths. It is a further object of this invention to provide an apparatus that can simultaneously emit laser light in multiple beam shapes and spot sizes. It is a particular object of this invention to provide a hand-held therapeutic laser device to provide low level laser therapy which can be used to simultaneously facilitate liposuction, treat post-operative inflammation and pain, and treat and repair injured muscles and tendons.

SUMMARY OF THE INVENTION

[0007] This invention is an improved hand-held laser device that can simultaneously provide multiple types of low level laser therapy treatments to multiple areas of a patient's body simultaneously. The device enables laser light of different pulse widths, different beam shapes and spot sizes to be applied to a patient's body. The device includes multiple laser sources. In the preferred embodiment, two semiconductor diode laser sources simultaneously provide two separate laser beams from separate probes, one laser beam producing laser light at a first pulse width and the other producing laser light at a second pulse width.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] FIG. 1 is a schematic illustration of a preferred embodiment of the present invention.

[0009] FIG. 2 is a schematic view of the optical arrangement producing a line spot shape of the preferred embodiment.

[0010] FIG. 3 is a schematic view of the optical arrangement producing a circular spot shape of the preferred embodiment.

[0011] FIG 4 is a schematic illustration of a preferred embodiment of the present invention, where the dotted line defines the components disposed in each probe.

[0012] FIG 5 is a schematic illustration of an alternate embodiment of the present invention, where the dotted line defines the components disposed in each probe.

[0013] FIG. 6 is a schematic illustration of an alternate embodiment of the present invention, where the dotted line defines the components disposed in each probe.

[0014] FIG. 7 is a schematic illustration of application of low-level laser radiation using the preferred embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0015] Referring to the drawings, there is illustrated a hand-held laser device designated generally as 10. The device includes one or more laser energy sources, a power source, at least two optical arrangements, one or more control circuits, and at least two hand-held aiming devices, referred to herein as probes. Fig. 1 shows the preferred embodiment in which a first probe 11 and a second probe 12 are connected to a base 14, which includes a power source 15 (not shown). The base 14 is typically a hand-held unit, but it may also be a stationary unit that typically sits on a table or the ground, functioning as a central base from which many probes may be employed.

[0016] The preferred embodiment comprises a first laser energy source 21 for emitting light from the first probe 11 and a second laser energy source 22 for emitting light from the second probe 12. The laser energy sources 21 and 22 are connected to the power source 15. The power source preferably provides direct current, such as that provided by a battery, but may instead provide alternating current such as that provided by conventional building current which is then converted to direct current. These laser energy sources can be energized independently or simultaneously, which throughout this specification refers to acts occurring at generally at the same time.

[0017] The first laser energy source 21 and second laser energy source 22 each produce a laser beam which exits the laser and is shone through optical arrangements 41 and 42, respectively, that produce beam spots. The beam spot is the cross-sectional shape and size of the emitted beam as it exits the optical arrangement. For example, a laser beam of circular cross-section creates a circular beam spot as the laser light impinges the patient's skin. If the laser light emitted is in the visible range, a circular spot can be seen on the patient's skin of substantially the same diameter as the laser beam emitted from the optics arrangement. Various beam spot shapes can be created, including a line, a circle, an ellipse, a plus-sign, or combination of any of them. The probes may product different spot shapes, or have the same spot shapes.

[0018] In the preferred embodiment, the first laser beam is passed through a first optical arrangement that generates a beam of substantially linear cross-section, resulting in a line of laser light seen on the patient's skin. The second laser passes through a second optical arrangement that generates a beam of circular cross-section, resulting in a circular spot shape as seen on the patient's skin. Fig. 2 illustrates the first optical arrangement 41 of the preferred device, which includes a collimating lens 44 and a line generating prism 45. The collimating lens 44 and the line generating prism 45 are disposed in serial relation to the laser energy source 21. The collimating lens 44 and the line generating prism 45 receive and transform the generated beam of laser light into the line of laser light L. As an alternative, a suitable electrical or mechanical arrangement could be substituted for the optical arrangement 41.

[0019] As shown in Fig. 3 the second optical arrangement 42 of the preferred device includes a collimating lens 46 and a beam spot shaping lens 47. As with the first optical arrangement, the collimating lens 46 and beam spot shaping lens 47 are disposed in serial relation to the second laser energy source 22. The collimating lens 46 and beam spot shaping lens 47 receive and transform the generated beam of laser light into a circular beam spot of laser light C. As an alternative, a suitable electrical or mechanical arrangement could be substituted for the optical arrangement 42 to achieve a desired spot shape.

[0020] Control circuitry is connected to the laser energy sources to control whether the lasers are on or off, how long the lasers are powered on, the duration of each pulse of

laser light emitted, and the period of time between one pulse starting and the next pulse starting, referred to herein as the pulse width. Typically the control circuitry is digital, in discrete or integrated circuits, as is known in the art, but analog circuits can also be employed. In the preferred embodiment there are separate control circuits for each probe. Control circuits 31 and 32 are connected to the laser energy sources 21 and 22, respectively, to control the various parameters of the emissions. For ease of reference, pulse widths can be referred to in shorthand notation in cycles/second, or Hz. Pulse widths from 0 to 100,000 Hz may be employed to achieve the desired effect on the patient's tissue. At 100,000 Hz, the pulse width is 0.00001 second. At 0 Hz, a continuous beam of laser light is generated. The goal for LLLT regimen is to deliver laser energy to the target tissue utilizing a pulse width short enough to sufficiently energize the targeted tissue and avoid thermal damage to adjacent tissue.

[00021] The probes have an interior cavity. In the preferred embodiment, the first laser energy source 21 and first optical arrangement 41 are contained in the first probe 11 and the second laser energy source 22 and second optical arrangement 42 are contained in the second probe 12, while the power source 15 and control circuitry 31 and 32 are contained within the base 14. See Fig. 4, which illustrates the configuration of the components of the invention as they relate to each probe, and where the dotted line 17 indicates the components disposed in the first probe and dotted line 18 indicates the components disposed in the second probe. Alternatively, the laser energy source, optical arrangement, and control circuitry can be housed in the probe. That is, the first laser energy source 21, the first optical arrangement 41, and the control circuitry for the first probe 31 are contained in the first probe 11, and the second laser energy source 22, the second optical arrangement 42, and the control circuitry for the second probe 32 are contained in the second probe 12, as the power source 15 remains within the base 14. See Fig. 5 in which dotted lines 17 and 18 again indicate the components that are in the probes. Fig. 6 shows another alternate configuration, in which a single laser energy source 23, a single control circuitry 33 for the first probe and the second probe, and the power source 15 are contained in the base 14, and the probes contain only the optical arrangement for the first probe 41 and the optical arrangement for the second probe 42,

respectively. Again, the dotted lines 17 and 18 indicate which components are in the probes.

[0022] Laser energy sources are known in the art for use in low-level laser therapy. Visible light in about the 400-700 nm range is preferred, and the frequency is determined by the particular therapy given to the patient. The laser energy sources include Helium-Neon lasers having a 632 nm wavelength and semiconductor diode lasers with a broad range of wavelengths between about 600-800 nm. The laser energy sources in the preferred embodiment are two semiconductor laser diodes that produce light in the red range of the visible spectrum, having a wavelength of about 635 nm. Other suitable wavelengths are used for other particular applications. While many LLLT regimen include visible laser light, it may be advantageous to utilize ultraviolet (approx. 1-400 nm) or infrared (approx 700 – 10^5 nm) laser energy, again depending on the type of treatment desired. Solid state and tunable semiconductor laser diodes may also be employed to achieve the desired wavelength.

[0023] Different therapy regimens require diodes of different wattages. The preferred laser diodes use less than one watt of power each to simultaneously facilitate liposuction, treat post-operative inflammation, and post-operative pain. Diodes of various other wattages may also be employed to achieve the desired laser energy for the given regimen.

[0024] Fig. 7 illustrates the device in use. A practitioner 70 treats one area of the patient 71 with the first probe 11 and treats a different area of the patient 71 with the second probe 12.

[0025] While there has been illustrated and described what is at present considered to be a preferred embodiment of the present invention, it will be understood by those skilled in the art that various changes and modifications may be made, and equivalents may be substituted for elements thereof without departing from the true scope of the invention. Therefore, it is intended that this invention not be limited to the particular embodiment disclosed as the best mode contemplated for carrying out the invention, but that the invention will include all embodiments falling within the scope of the appended claims.

ABSTRACT

A hand-held laser device that can simultaneously provide multiple types of low level laser therapy treatments to multiple areas of a patient's body simultaneously. The device enables laser light of different pulse widths, different beam shapes and spot sizes to be applied to a patient's body. The device includes multiple laser sources. In the preferred embodiment, two semiconductor diode laser sources simultaneously provide two separate laser beams from separate probes, one laser beam producing laser light at a first pulse width and the other producing laser light at a second pulse width.

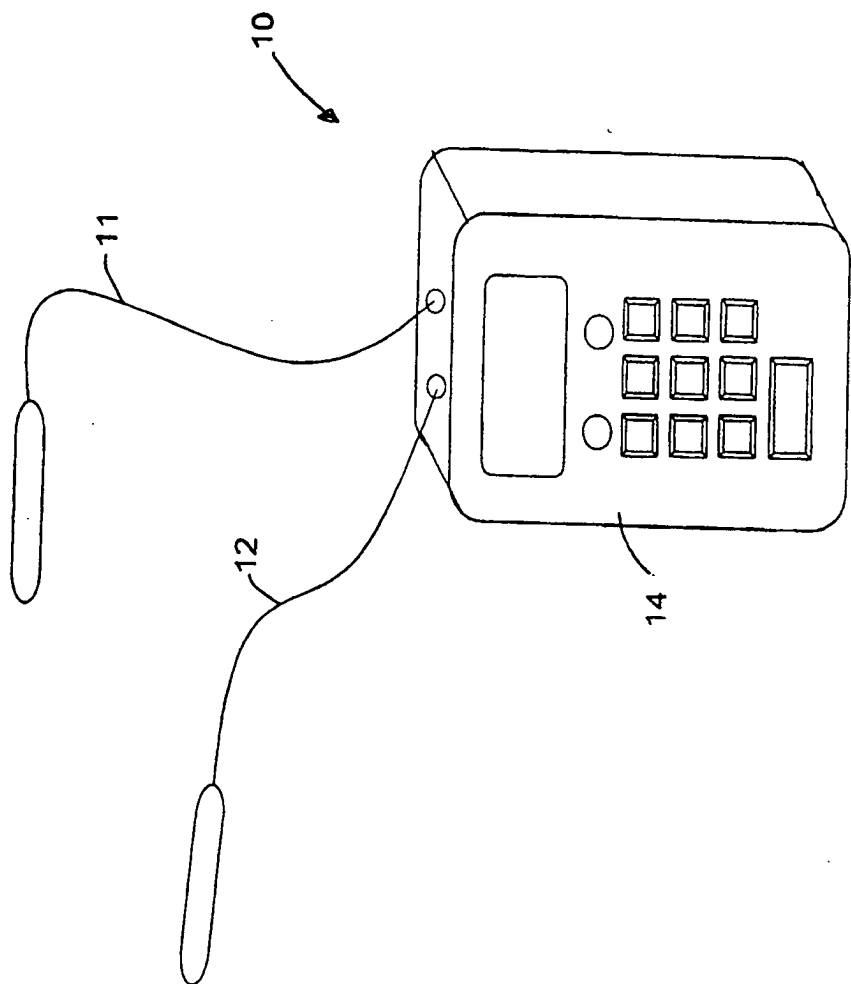


FIG. 1

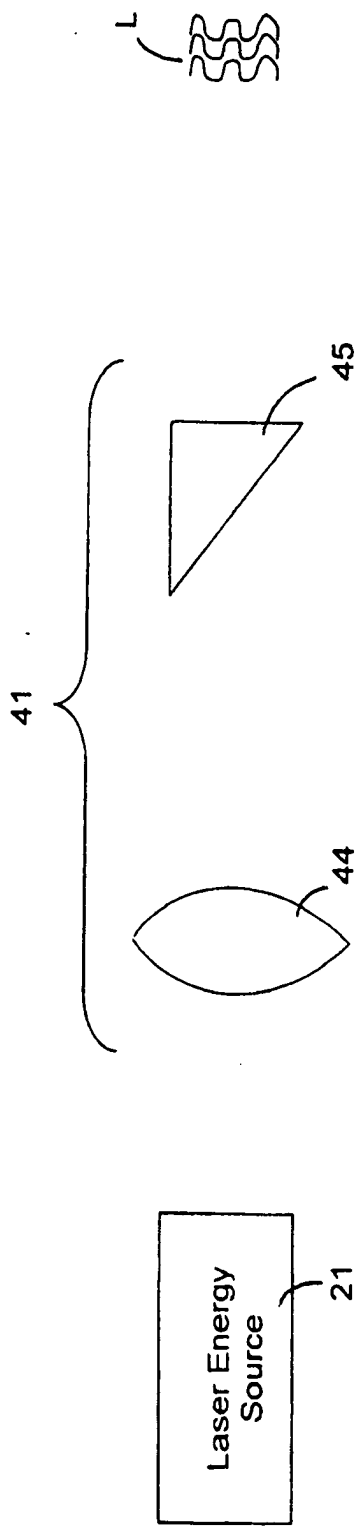


FIG. 2

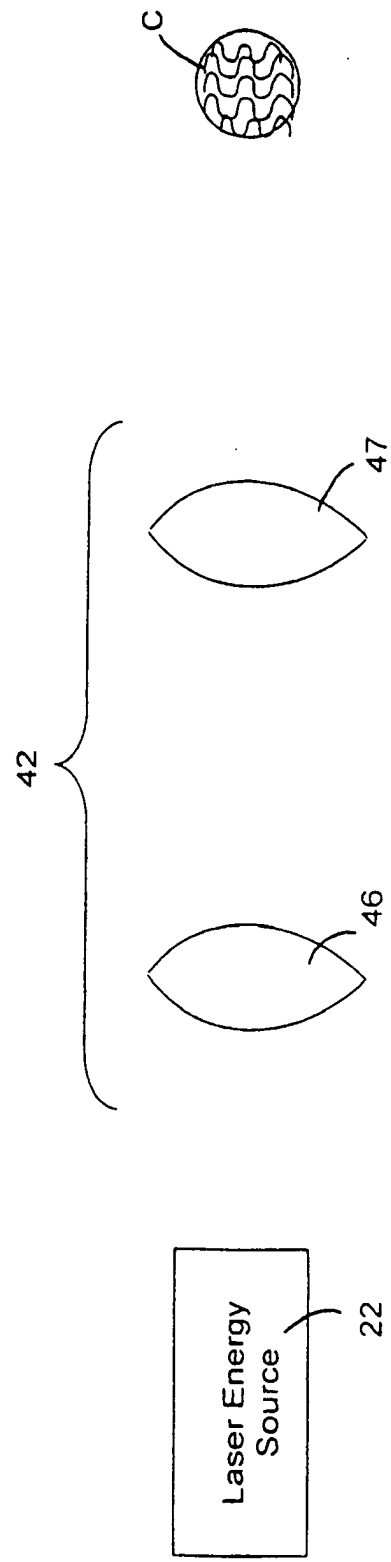


FIG. 3

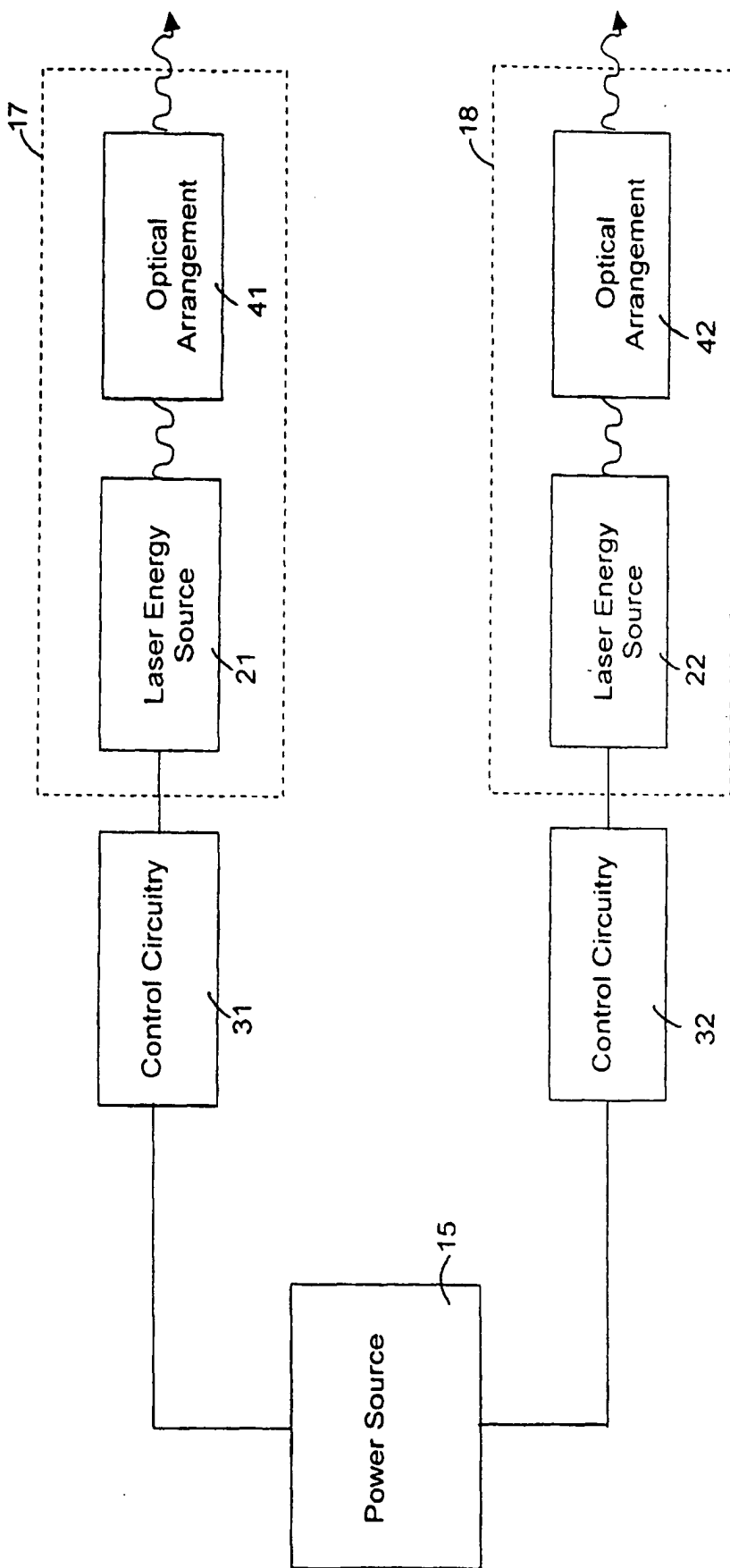


FIG. 4

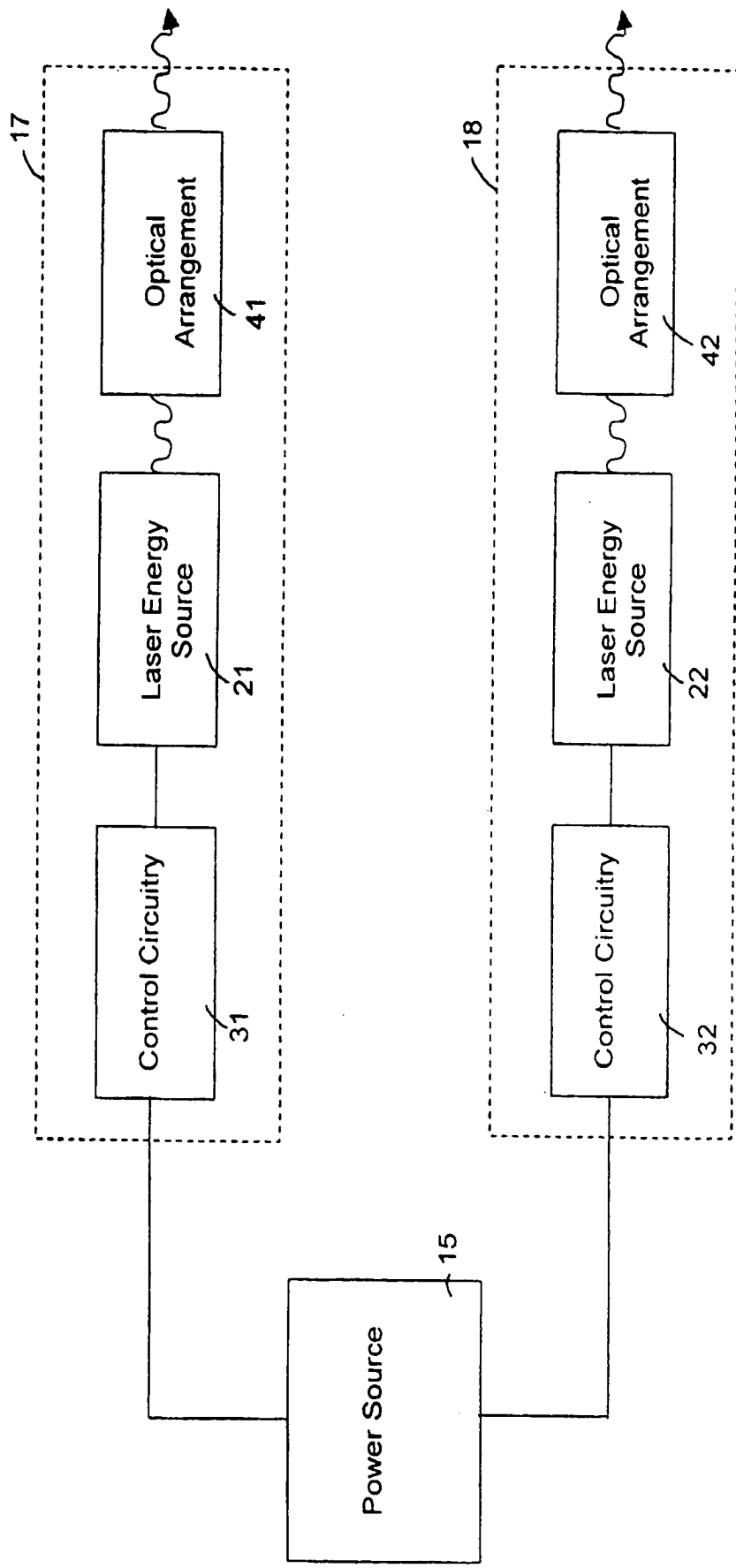


FIG. 5

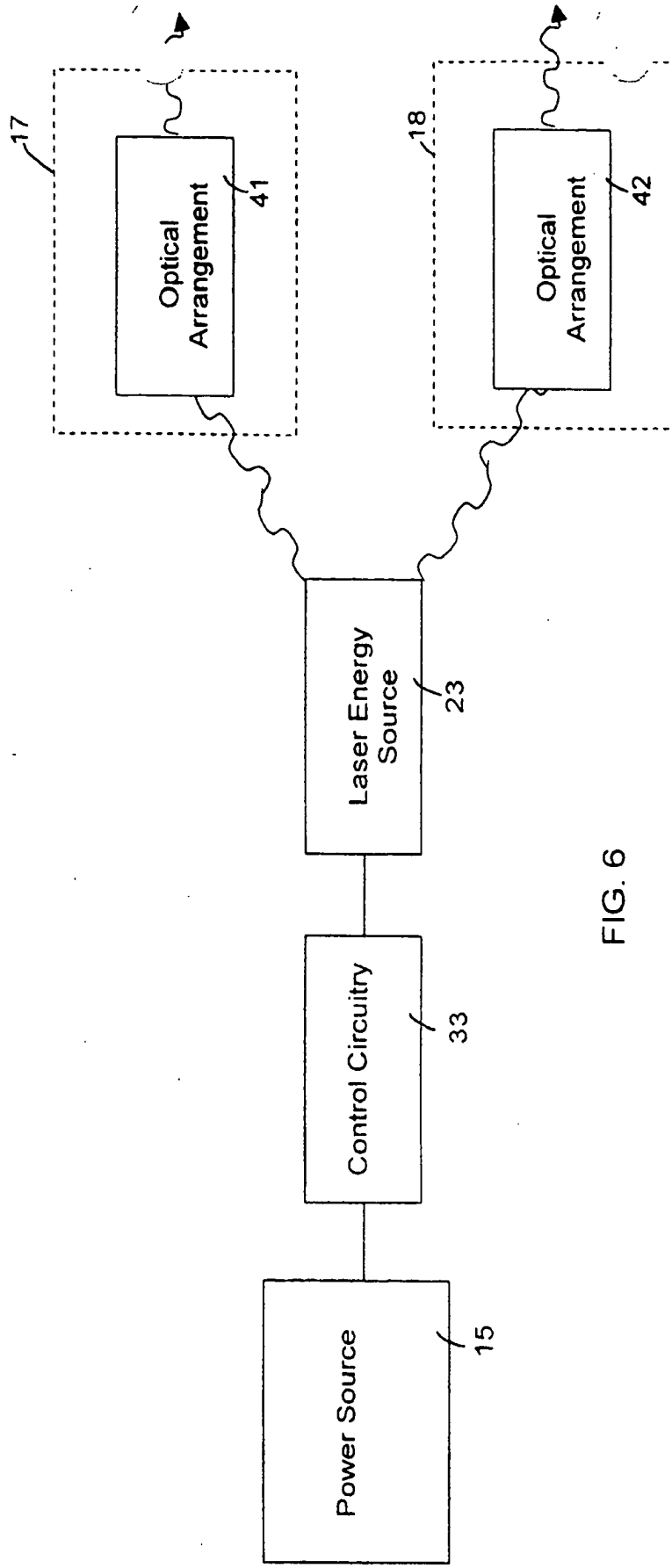


FIG. 6

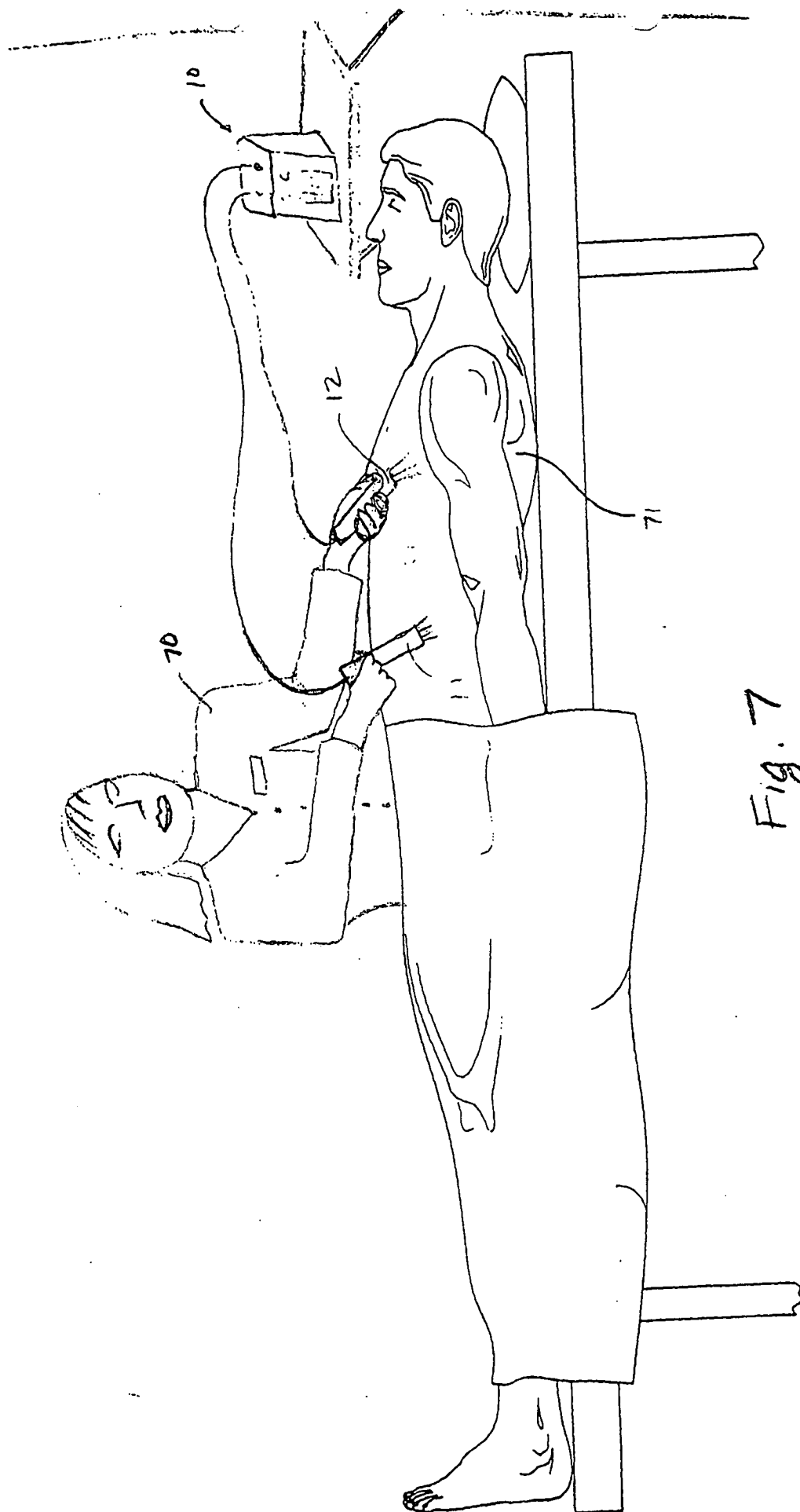


Fig. 7